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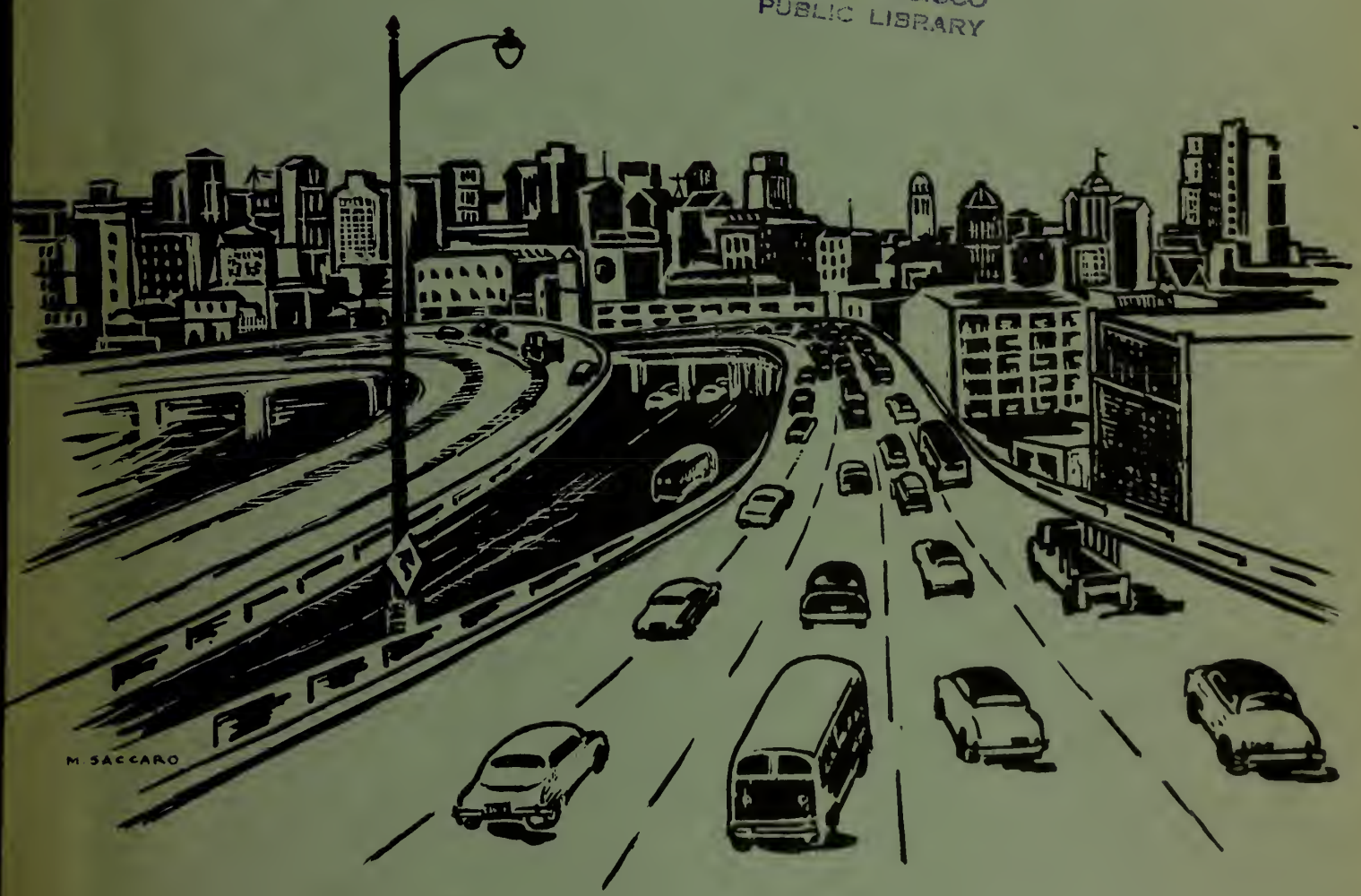
E. Murphy

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# DAILY TRIPS IN SAN FRANCISCO

*to work . . . to shop . . . to play  
..... from bay area counties*

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City and County of San Francisco

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D A I L Y   T R I P S

I N

S A N   F R A N C I S C O

The daily vehicular passenger movements to work, to shop, to school, to recreation, and for business, and movements home again by public transit and private automobile within San Francisco, into San Francisco from Bay Area points, and into San Francisco's Downtown District.

An analysis of survey data - 1913, 1926, 1937, 1947, and 1954

JUNE - 1955

This report was prepared by William A. Proctor under the direction of Frank L. Lombardi, Chief, Projects Planning Division, with the assistance of Dorothy Nelson and other staff members of the Department of City Planning.

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Daily trips in San  
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# THE HISTORY OF THE

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BY JOHN BURNET

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CITY AND COUNTY OF SAN FRANCISCO

DEPARTMENT OF CITY PLANNING

100 LARKIN STREET • CIVIC CENTER • SAN FRANCISCO 2, CALIFORNIA

June 13, 1955

Mr. Ernest E. Williams, President  
San Francisco City Planning Commission  
100 Larkin Street  
San Francisco 2, California

Dear Mr. Williams:

I am pleased to submit to you this report on daily passenger movements within our city, into its central areas, and into the city from the Bay Area.

For a long time the need has been felt for the gathering and analysis of data and the refinement of data we have in the office or available to us concerning daily movement of people -- particularly into our downtown district -- and regarding our "daytime population."

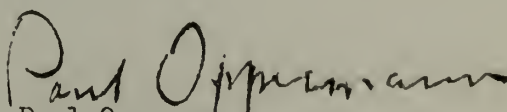
As stated in the report's introduction, a clear picture of daily movements by transit and auto is necessary in the work of this Department, and in that of other city departments. It is of great value to merchants and to others as well, who need to know the answer to "Where do people go?" "How many people come downtown?" and "How many commuters are present there at a given time?"

Information contained in this report is closely related to preparation of current plans and those which come later for the development of Downtown San Francisco, the South-of-Market area, the Produce Market area, the off-street parking program, and for rapid transit planning.

I wish to acknowledge the excellent cooperation of the California Division of Highways, the San Francisco Bay Area Rapid Transit Commission's engineering consultants, and of the Department of Public Works and the Municipal Railway of the City and County of San Francisco, in providing information that has made preparation of this report possible.

Publication of this report is directed to the end of providing a wider public understanding of San Francisco's daily passenger movement patterns and their relationship to our daily business, employment, and general planning needs. The staff of the Department believes that it will prove extremely useful to these important purposes and uses.

Yours truly,

  
Paul Oppermann  
Director of Planning

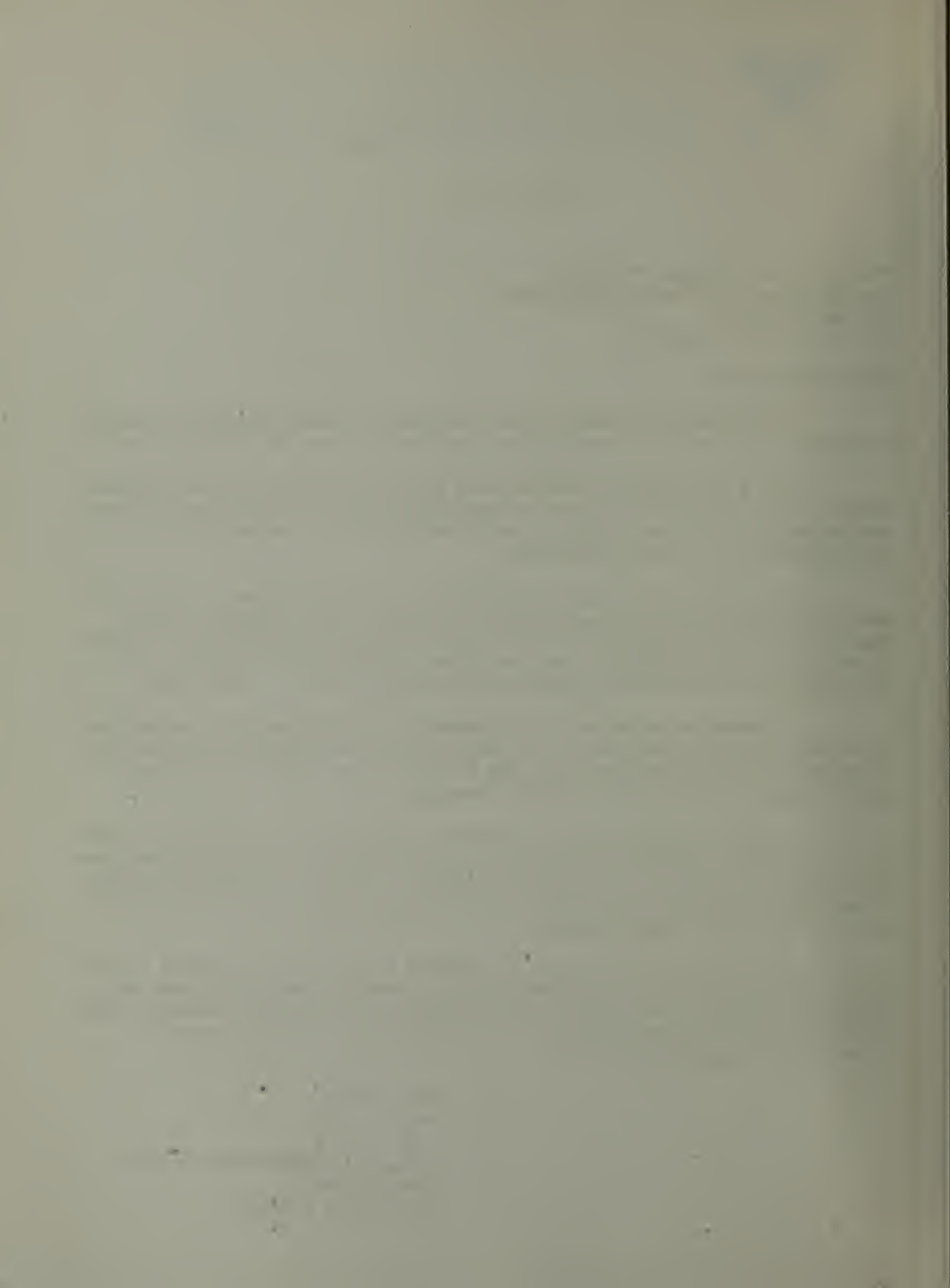
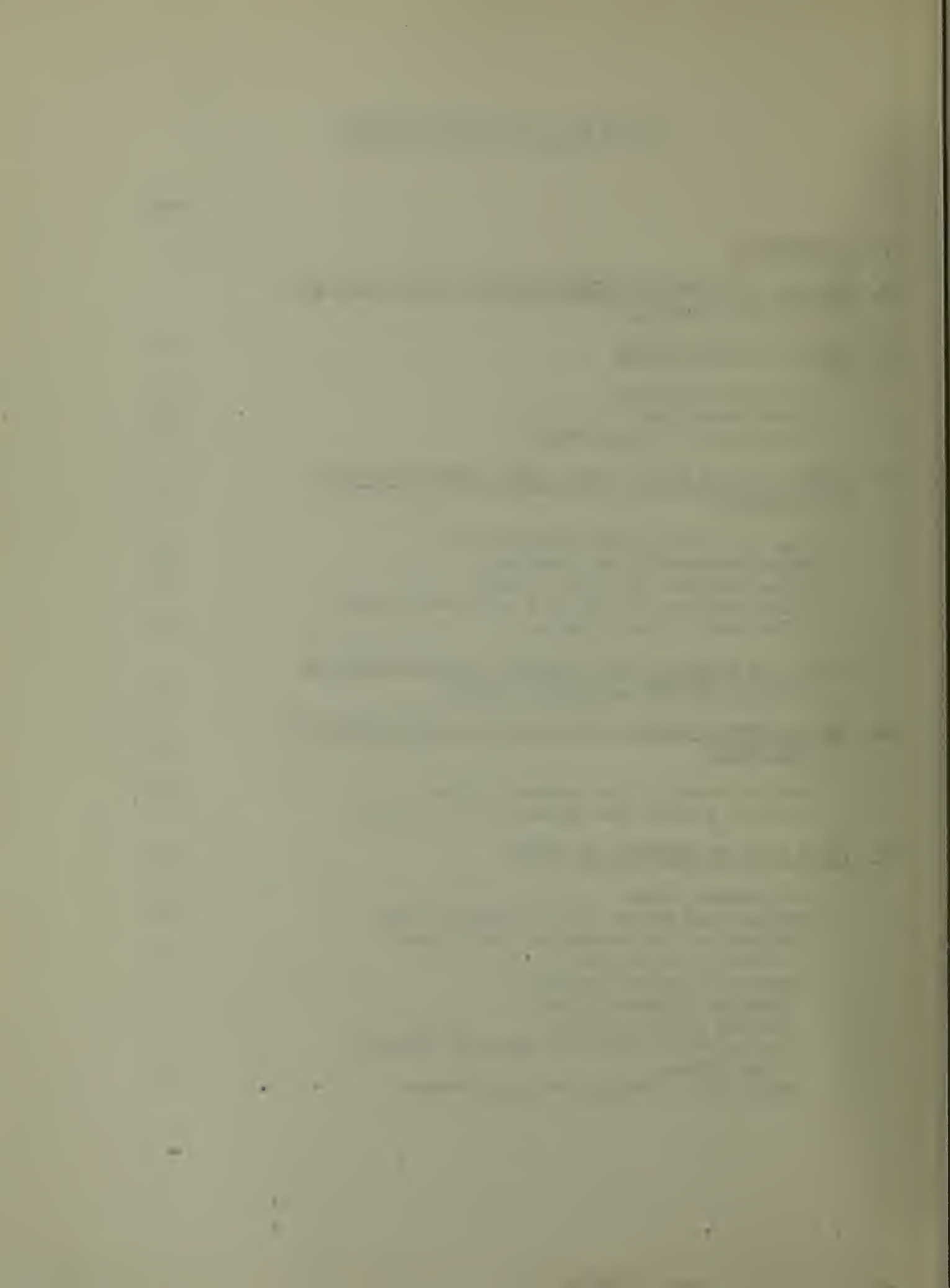


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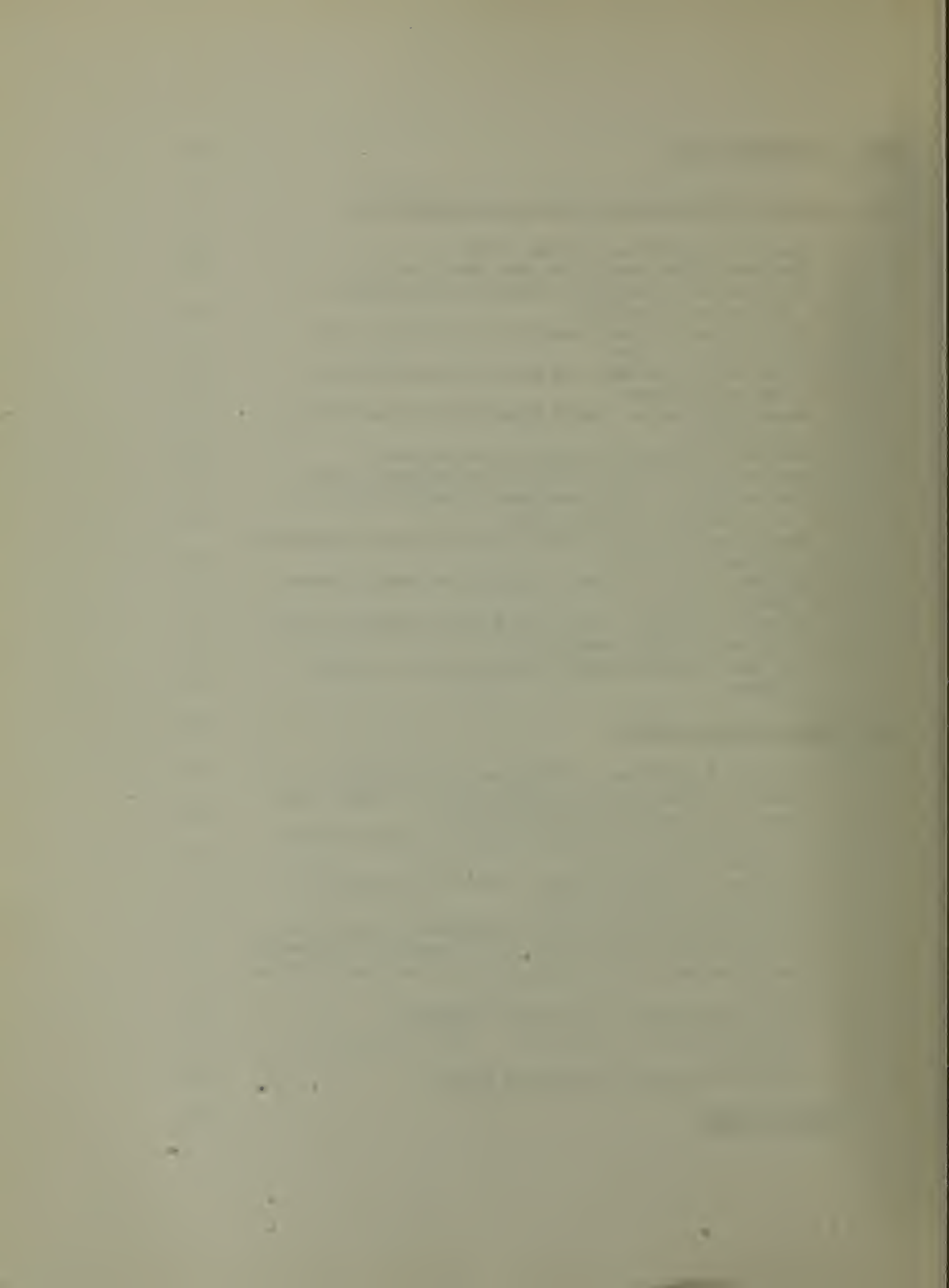




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I. INTRODUCTION

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In the office of the Department of City Planning the staff is constantly asked questions such as:

- "How many commuters come into San Francisco every day?"
- "How many people come into the Downtown District everyday?"
- "What proportion of San Francisco's employment is Downtown?"
- "What is our Daytime Population?"
- "Where are our main employment concentrations? How many people work in the South-of-Market District?"
- "How much of a shift has there been from use of public transit to the use of private automobiles in trips to work or other trips?"

The staff also finds that it needs to know the answer to these questions in the pursuit of its own work, in drawing up planning proposals for various parts of the city, particularly for Downtown, and in advising and planning on matters concerning off-street parking, mass transportation, utilities planning, and traffic matters.

These data are also valuable to others. The San Francisco Disaster Corps has at numerous times requested estimates of downtown daytime population for guidance as to the magnitude of evacuation problems. Merchants want to know estimated employment in districts within the Downtown District. Business men are vitally interested in how many commuters and shoppers come into the Downtown District both from San Francisco and from other Bay Region cities. The San Francisco Parking Authority is interested in trip destinations of auto drivers in the Downtown District. The city's Public Works Department and Public Utilities engineering staffs often consult as to estimated daytime population for guidance in planning for future installations.

These questions are not necessarily answered in many of the traffic surveys and other traffic studies that are undertaken. Counts and tabulations of traffic flow data to determine total volumes using particular streets and highways are the easiest data to collect, and most significant in the solution of immediate short-range problems. In order to find out where trips start, where they end, why they were undertaken, and by what means of transportation, use of interview survey techniques on a representative sample of travellers is necessary, where they are asked trip origins, destinations, times, routes, purposes, and means of travel. This sample is then expanded percentage-wise to equal actual traffic flow, and check-points on trips outlined in interviews are established to compare the sample with observed traffic volumes.

A comprehensive study of this nature involving home interviews on a 5 per cent sample basis was undertaken in 1946 and 1947 by the California State Department of Public Works, Division of Highways, District Office IV (San Francisco Bay District Office) with financial and staff aid from the United States Bureau of Public Roads, and from agencies of the City and County of San Francisco. It was an intensive study of passenger movements in San Francisco and ten East Bay Cities including Richmond, Oakland San Leandro and cities in between.



# REPORT

ON THE PROGRESS OF THE WORK DURING THE YEAR 1900

The work of the year has been devoted to the study of the various forms of the verb, and to the determination of the principles which govern their use. The first part of the year has been spent in the study of the infinitive, and the second part in the study of the participle. The results of the study are given in the following tables.

The first table gives the forms of the infinitive, and the second table gives the forms of the participle. The third table gives the forms of the verb, and the fourth table gives the forms of the noun.

The fifth table gives the forms of the adjective, and the sixth table gives the forms of the pronoun. The seventh table gives the forms of the preposition, and the eighth table gives the forms of the conjunction.

The ninth table gives the forms of the interjection, and the tenth table gives the forms of the particle. The eleventh table gives the forms of the auxiliary verb, and the twelfth table gives the forms of the copula.

The thirteenth table gives the forms of the modal verb, and the fourteenth table gives the forms of the verb of obligation. The fifteenth table gives the forms of the verb of permission, and the sixteenth table gives the forms of the verb of prohibition.

The seventeenth table gives the forms of the verb of request, and the eighteenth table gives the forms of the verb of command. The nineteenth table gives the forms of the verb of advice, and the twentieth table gives the forms of the verb of warning.

This survey, the Bay Area Metropolitan Traffic Survey (Short Title: "B.A.M.T.S."), was completed in 1948, but not published until June 1949. Data from its tabulations were furnished the City and County of San Francisco for its comprehensive transportation survey of 1948, and formed the basis of computations as to anticipated traffic volumes in 1970 for the proposed plan of free-ways, expressways, major thoroughfares, and rapid transit lines outlined in the Report ... on a Transportation Plan for San Francisco developed by four city departments assisted by the city's consultants, De Leuw, Cather and Company and Ladislav Segoe and Associates, and published in November of 1948. Bay Area Metropolitan Traffic Survey data has also been made use of extensively in various reports recommending locations for an additional trans-bay toll crossing from San Francisco to Alameda County, as well as in the Division of Highways' own planning activities for its program of Bay Area freeway construction.

Origin and Destination Survey of Southern Pacific and Pacific Greyhound Passengers Entering San Francisco was another interview type of survey undertaken in the course of the San Francisco Transportation Survey to supplement B.A.M.T.S. data. The "S.P.-Greyhound O-D Survey" was published in January of 1948 by the Department of City Planning for the Mayor's Administrative Transportation Council which conducted the 1948 transportation survey and prepared the 1948 report (Departments of Public Works, Police, Planning, and the city's Public Utilities Commission).

For the San Francisco Bay Area Rapid Transit Study, an origin-destination survey was undertaken in the spring of 1954 as a part of a current survey of rapid transit potential for the entire nine-county San Francisco Bay Area by Parsons, Brinckerhoff, Hall, and Macdonald, engineering consultants to the San Francisco Bay Area Rapid Transit Commission. This current origin-destination survey brings up to date a considerable portion of the B.A.M.T.S. data, and covers suburban and outer areas not intensively studied in it. Material from this O-D survey has been provided the Department of City Planning by the consultants. Computations in text and tables in this report are the result of analysis of "raw data" provided from the rapid transit survey by the staff of this Department, and are not necessarily the conclusions or results that will be published in the rapid transit survey (now expected to be published in August or September of 1955).

In addition to data from these origin-destination surveys, from which considerable material was extracted relative to where San Franciscans and Bay Area dwellers come in San Francisco to work, to shop, or to find social or recreational activity, numerous other sources have been made use of, particularly for historical trends. These studies (mostly of the traffic-count type, or accumulations of annual statistics on passengers carried, tolls collected, etc.,) include:

1. Cordon Count Data, Metropolitan Traffic District, San Francisco. (October, 1947) San Francisco Administrative Transportation Council. A tally of all persons and vehicles entering and leaving (on a typical week day in 1947, from 7 A.M. to 7 P.M.). San Francisco's Metropolitan Traffic District, made up of the following districts, approximately (See Map, Chart 2): North Embarcadero, Financial, Downtown Shopping and entertainment, Uptown Shopping, Civic Center-Van Ness, and South of Market.



2. Unpublished cordon count (1953) of vehicular traffic into and out of the Metropolitan Traffic District, undertaken by the Traffic Engineering Division, Department of Public Works of San Francisco (computations made by Department of City Planning staff from "raw data" provided by the Traffic Engineering Division).

3. Unpublished cordon count (1954) of Municipal Railway passengers entering and leaving the Metropolitan Traffic District obtained by the staff of the Department of City Planning from passenger counts made by the Railway at M.T.D. gateways.

4. The City-Wide Traffic Survey (1937), W.P.A.-financed survey undertaken by traffic consultant Miller McClintock for San Francisco's Department of Public Works, a comprehensive survey based primarily on traffic flow counts.

5. The City-Wide Traffic Control Problem of San Francisco (1926) San Francisco's first comprehensive traffic survey, undertaken by traffic consultant Miller McClintock, and financed by groups of Downtown San Francisco business and civic organizations.

6. Report on Transportation Facilities of San Francisco (1913), San Francisco's first comprehensive survey of transit facilities, with Bion J. Arnold the consulting transportation engineer. (This was the report which recommended: Twin Peaks Tunnel; Sunset Tunnel; Stockton Street Tunnel; numerous improvements and extensions of the Municipal Railway. Most of his recommendations -- except a Market Street subway -- were carried out).

7. Reports and annual reports of agencies such as the California State Public Utilities Commission, the California State Toll Bridge Authority, the Golden Gate Bridge and Highway District, the California State Department of Public Works, the Hoover-Young Commission for the Location of a Crossing Over San Francisco Bay, the Southern Pacific Railroad, and others.

In most traffic or transit surveys, available data is discussed and interpreted in the light of needs for immediate construction of a proposed facility, such as a subway, bridge, tube, freeway, or the abandonment of a particular suburban transit line. It is the objective of this present report to interpret such data in a way that can be useful to others than transportation planners, so that some concept of daily movements of people can be gained which would be useful in estimating employment location, market analysis, and other aspects of problems connected with daily trips in a metropolitan area, and particularly with Downtown San Francisco's very large "Daytime Population."





## II. SUMMARY: THE GENERAL PATTERN OF DAILY TRIPS WITHIN AND INTO SAN FRANCISCO. ::

### Two-Thirds of San Francisco's Population Takes Two Trips Every Day.

A total of 1,370,645 daily trip destinations within San Francisco were recorded in the 1947 Bay Area Metropolitan Traffic Survey. The figure today is probably nearer 1,500,000. Subtracting trips of suburban origin, this would mean that two-thirds of San Francisco's population (estimated at 785,900 for 1954) takes two trips every day by public transit or private auto. Forty per cent of these trips originated at home, forty-three per cent had home as a destination, and the remainder, 17%, might be called "trips around town" with home as neither an origin or destination.

### San Franciscans' Daily Journey to Work is Largely by Public Transit.

Almost two-thirds (63 per cent) of all daily trips from home to place of employment in San Francisco in 1947 were made by public transit. In 1954, despite a decrease of 19 per cent in peak hour patronage of public transit in San Francisco and an increase of 18 per cent of peak hour automobile traffic, as compared with 1947, an estimated majority of San Franciscans still go to work by public transit. In 1947, total trips to work from home or similar origins amounted to 267,000 trips.

### Business and Work Trips "Around Town" Are almost Exclusively by Automobile.

Nine out of ten trips taken in the course of the day's work (as by architects, contractors, doctors, salesmen, utilities maintenance crews) are by private automobile. This seems logical upon reflection of the difficulties that would be encountered by a salesman in covering a suburban or outlying residential district by street car or bus. Over 100,000 such trips were taken in 1947 in San Francisco.

### Four out of Five Social or Recreational Trips are by Private Automobile.

Although many San Franciscans may use their Municipal Railway for trips to the Downtown District when seeing a movie or going out to dinner, (where service is frequent and Downtown parking spaces are scarce or expensive), most recreational trips are undertaken by private automobile. Ease and economy of group travel, fast, direct and personally-controlled schedules without transfers or delays, social prestige and ease of access to out-of-way places are probably important factors in the choice of the private automobile as the vehicle for social and recreational travel. This class of travel accounted for 166,758 trips on a typical week day in 1947.

### Almost 200,000 Bay Region Residents Come into San Francisco Every Day.

In 1954 it was found that 183,000 persons entered San Francisco from points in the nine-county San Francisco Bay Region on a typical week-day. Over half, or almost 100,000 of these were "commuters" or persons coming in every day to work. The rest were shoppers, persons on business, or persons with errands, or on trips to doctors or dentists, or with social or

ORIGINAL ARTICLES

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BY DR. J. H. HAY, CHICAGO, ILL.  
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marked effect on the resistance of the body to  
infection. It has been found that the virus  
acts as a powerful adjuvant, increasing the  
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recreational destinations in mind. Over half (56 per cent) of daily trips from Bay Area points into San Francisco come into the Metropolitan Traffic District (the Downtown District and its immediate surroundings), about 30 per cent are bound for the city's residential community areas, and around 14 per cent have outer industrial areas, such as Hunters Point, as destinations.

#### Suburban Train and Bus Commuters Come Mostly to the Downtown Center.

The Metropolitan Traffic District (See Plate 2) is the destination of 71 per cent of all suburban work trips into San Francisco. Almost half (47 per cent) of these work trips to the Downtown District and its surrounding districts were made by suburban trains and buses. Proportions of persons using trains and buses are highest from suburban areas served by fastest or most frequent and convenient public carriers. From some areas of the Peninsula, over 65 per cent of commuters to San Francisco's central areas come by Southern Pacific train or Greyhound bus.

#### Suburban Commuters to Outlying San Francisco Districts Mostly Use Automobiles.

Into San Francisco districts such as Hunters Point, Bayview, Stonestown, the Richmond, the Mission, or Western Addition, 84 to 92 per cent of all commuters from Bay Area points came by private automobile, and only a small number ride suburban trains and buses, transferring to Municipal Railway vehicles for rides to outlying employment centers.

#### Suburban Transit Operations are Mostly Peak Hour Concentrations

On the San Francisco-Oakland Bay Bridge, 60 per cent of the persons crossing from the East Bay to San Francisco from 7 AM to 8 AM were on public transit vehicles. On a typical mid-day hour, however, only 23 per cent of the total persons crossing the bridge were in trains or buses. Similar patterns hold true for the Golden Gate Bridge, and for the Southern Pacific-Bayshore Highway gateway from the Peninsula.

#### Trans-Bay Transit Use has Declined and is Now Less than in 1907.

The 12,000,000 annual trans-bay passengers crossing the San Francisco-Oakland Bay Bridge in suburban trains and buses is less than the 19,000,000 persons per year crossing the bay on the train-ferry system in use in 1904. It is a little more than one-third the 32,200,000 annual passengers using the train-ferry system to the East Bay in 1907! Similarly, in 1953, the 4,700,000 persons carried over the Golden Gate Bridge by the Pacific Greyhound bus system were less than the total passengers carried from San Francisco to Marin County by the Northwestern Pacific train-ferry system in 1907. By contrast, steady increases in transit patronage have occurred on the Peninsula, particularly in the commuter travel by train. Some decreases have been noted by the rapid transit survey consultants, in local inter city travel by bus on the Peninsula.





Total Trans-Bay Crossings have Increased.

Total travel from Marin County and north bay points, including travel by private automobiles into San Francisco, and total travel from Peninsula points into San Francisco, have increased at about the same rate as population of the suburban counties. Total travel between East Bay points and San Francisco has increased, but only by about half the rate of East Bay population increases. Since 1946, total passenger travel over the Bay Bridge by auto and by public transit has shown little increase, and in some years has shown slight declines. From 1947 the number of East Bay commuters into San Francisco increased, but in shopping, social, recreation, etc., travel, slight decreases were found.

Use of Public Transit has Declined in San Francisco since 1947.

Since 1947, about 50,000 additional passenger automobiles have been added to the city's traffic streams. Similarly, about 50,000 people entering the Metropolitan Traffic District (Downtown and vicinity) use private autos to get there, where they formerly used public transit. Cordon counts show that from 20 to 22 per cent more passenger autos entered the Metropolitan Traffic District every weekday in 1953 than entered in 1947. Municipal Railway counts showed that in 1954 from 19 to 27 per cent less transit passengers entered the district than entered it in 1947. Although this results in a substantial increase in the total number of vehicles entering Downtown San Francisco, only a slight increase in the total number of persons has resulted. Transit officials often state: "One bus equals thirty-five automobiles" in passenger-carrying capacity.

"Trips Downtown" Have Not Increased at Same Rate as Population.

In 1912, an estimated 300,000 persons entered San Francisco's Central Business District (Financial and Downtown Shopping Districts). In 1954, a little over 400,000 is the estimate or an increase of about 33 per cent. Today's population of almost 800,000 persons is almost double San Francisco's 1912 population of about 420,000 persons. Studies show, however, that the larger a metropolitan center, the smaller the proportion of population coming Downtown. Into the Metropolitan Traffic District, including not only the Central Business District, but also bordering districts (such as South-of-Market, Embarcadero, Civic Center-Upper Market), came about 540,000 persons in 1954, over four-fifths of whom came from within San Francisco. Thus about half of San Francisco's population "comes Downtown" (or to districts bordering Downtown) sometime during the average business day.

Over Half of the Daily Trips into or within San Francisco ("In-Bound" type) have Destinations in the Metropolitan Traffic District.

Of San Francisco's daily in-bound type trips, 54 per cent were to points in the Metropolitan Traffic District (excluding trips to home and other "out-bound" type trips, and excluding trips that have neither origin nor destination at home ("trips-around-town"). The Central Business (Financial and Downtown Shopping) District accounted for 30 per cent of the city's total trip destinations of an "in-bound" nature.





Transit "in-bound" trips were mostly (73 per cent) to points in the Metropolitan Traffic District, while less than half (41 per cent) of "in-bound" auto trips were to points in the M.T.D., the majority going to places in outer residential or industrial districts.

Public Transit Used to Reach Central Areas, but Autos Used to Reach Outlying Parts of City.

Workers in San Francisco's Financial District came 71 per cent by public transit, while only 31 to 33 per cent of those working in outlying industrial or residential districts used public transit in their commuter trips. Over two-thirds used private automobiles. For shopping, recreational and other non-work trips, the proportion using public transit was less. Surveys covering 24-hour periods show higher use of private automobiles for all types of travel than do surveys for passenger movements from 7 AM to 7 PM. This is understandable, since transit terminals (particularly to suburban points) practically shut down at midnight, while major highways are almost as active at 1 AM as during mid-day.

Six-tenths of San Francisco's Employment is in the Metropolitan Traffic District.

On the basis of work-trip destination data, it is estimated that 63.4 per cent of San Francisco's employment is within downtown areas contained in the Metropolitan Traffic District. Almost 31 per cent of the city's employment is in the Central Business District (within the M.T.D.), and about 21 per cent is in its close-in industrial districts (South of Market and North Embarcadero). Only seven per cent of the city's employment is in outlying southeastern industrial districts such as Islais Creek, Hunters Point, Bayview, and Visitacion Valley. About 30 per cent of San Francisco's workers have jobs in the city's residential community areas (the Mission, the Sunset, the Richmond, etc.).

San Francisco's Individual Residential Community Areas Showed Differing Patterns of Destinations in the Working Areas.

Computations as to where people of San Francisco's various residential community areas go in their daily trips showed differing proportions going to the Financial District, the Shopping District, and the industrial districts.

To the Financial District, from the Outer Richmond, Richmond, Marina, West-of-Twin Peaks and Sunset residential community areas, went from 13 to 19 per cent of all trips to downtown and industrial districts. These are mainly medium to high-rent single-family homes areas or low-density apartment or flat districts.

The Western Addition, Downtown Residential, and Buena Vista Districts, where lower rents are the rule, and higher density apartments are typical, provided lower proportions of trips to the Financial District. Lowest proportions came from the Mission, Potrero, Bayshore and Outer Mission residential communities, which are characterized by lower median rents and are typically single-family homes areas (except for parts of the Mission District).



To the Shopping Districts (Downtown Shopping and Entertainment District, and Uptown-Civic Center-Van Ness District) all residential districts except four (Mission, Potrero, Bayshore and Outer Mission) showed more than 50 per cent of the communities' destinations within the working areas.

To the industrial districts -- North Embarcadero, South-of-Market, Potrero Industrial, and Bayshore Industrial -- highest proportions of destinations were found to originate in the Mission, Potrero Residential, Bayshore Residential, and Outer Mission Districts. Greatest volumes of movement from living areas to working areas were found to be between residential districts and working areas of greatest proximity.

Transit Use to the Central Business District was High from All Residential Areas.

To San Francisco's congested core, the Financial District and to the Shopping Districts, daily trips were almost uniformly preponderantly by public transit from all of San Francisco's residential community areas. This was true regardless of the characteristics of the community, such as median rent, typical family income, proportion of single family homes, proportion of single unrelated persons, or proportion of high density apartments.

Automobiles were Used to Destinations in Industrial Districts More from Single-Family Homes Districts than from High-Density Apartment Districts.

From areas preponderantly made up of single-family homes, such as the Sunset, West-of-Twin Peaks, Bayshore, Outer Mission, Richmond, and Outer Richmond residential community areas, automobiles were used in the majority of trips from the district to the city's industrial districts. This was also true of the Marina which is a medium to high-rent low-density apartment and flat district. From high-density apartment districts, characterized by lower median rents, however, public transit was used in a majority of trips from those districts to industrial areas. This was true of the Western Addition, Buena Vista, and Mission Districts.

Attraction of Shoppers to Downtown Districts Remains Strong Despite Attractions of New Suburban Shopping Centers.

Store executives find that 60 per cent of their customers continue to trade with downtown stores from areas in which branch stores have been established in new suburban shopping centers. Most suburban shopping center customers come from an area within five minutes' driving time from the center. Shopping tends to be "convenience" shopping while downtown tends to be the place where more expensive apparel, furnishings, art objects, and durable goods purchases are made. In San Francisco, in 1947, shopping-type trips had destinations about half in the downtown districts, and about half in the outer community residential areas.





### In Large Metropolitan Areas, Most Shoppers Go Downtown by Transit.

In suburban shopping centers, only 15 per cent of the shoppers came by public transit, while from a half to three-fourths of the shoppers going to downtown districts of large metropolitan central cities went there by train, bus, or street-car. This transit proportion became larger as population of metropolitan areas became larger. Surveys showed that people from the same district, characterized by high per-capita automobile ownership, went predominantly to suburban shopping centers by auto, but when they went to downtown shopping districts, they went predominantly by public transit. It is also found, however, that suburban shopping centers cannot be successful if attracting only "auto-mobile trade". San Francisco's Stonestown, for instance gets only 50 per cent of its customers by private auto. The other half ride transit or are "walk-in" trade from nearby apartment and residential neighborhood developments.

### Data Indicates Some Trips Best Served by Transit, some by Private Auto.

Trips to congested metropolitan core areas (such as Downtown San Francisco) continue to be made in large part by public transit despite widespread shifts to auto use.

Trips to work are largely made by public transit despite increased auto use. Auto commuters are predominant at outer employment centers (less conveniently served by transit systems).

Trips in the course of the day's work (doctors, salesmen, contractors, etc.) will probably always be 9/10ths by private auto, as at present.

Recreation Trips will probably always be mainly by private auto.

### Balanced Transportation System Needed

To serve daily trip needs of San Franciscans and Bay Area residents, present and proposed programs of freeway and expressway construction, off-street parking terminal construction, interurban rapid transit and urban rapid transit are required to provide an efficient means of fulfilling the needs for proper daily local and interurban travel.



### III. PURPOSES OF DAILY TRIPS

.....

Trips to work (or trips undertaken in the course of the day's work) constituted 27.3 per cent of the 1,370,645 daily vehicular passenger trips with destinations in San Francisco counted in the Bay Area Metropolitan Traffic Survey in 1947. Other important purposes of daily trips were trips to home (37.7 per cent), trips for social and recreational purposes (12.2 per cent), and trips to shop (6.2 per cent). Besides these trips, there were trips to "serve passenger" (that is, a trip to a point where a passenger would be let off or taken which was not the driver's destination -- 5.5 per cent), trips to transact business (4.1 per cent), trips to school (2.8 per cent), trips for medical or dental attention (1.1 per cent), and trips "to change travel mode" (or take auto to transit parking lot for trip downtown by transit, or a trip to airport or railway depot to take train or plane -- 1.2 per cent) and trips to eat meals (1.9 per cent). (See Plate 1 and Tables 1, 2, 3 and 4).

How people traveled, (that is whether by private auto or by public transit), differed considerably as with the purpose of the trip. Highest proportionate use of public transit was in trips to school, which in San Francisco is influenced by use of reduced-fare "school tickets" honored by the Municipal Railway. Students and pupils en route to school went 74 per cent via public transit.

Trips to get medical and dental attention also had high proportionate transit use, (63.4 per cent), reflecting tendencies of doctors and dentists to locate offices in central areas where parking space is scarce and expensive. Around 40 to 45 per cent of all trips to work and work trips, trips to transact business, trips to shop, and trips to change travel mode were undertaken by public transit. Low proportionate transit use was shown in trips for social and recreational purposes (28.6 per cent), trips to eat meal (19.5 per cent) and trips to "serve passenger."

A clearer picture of typical daily passenger movements was obtained by breaking the totals shown in B.A.M.T.S. charts into three characteristic types of daily passenger trips (See also Plate 1 and Tables 1, 2, 3, and 4):

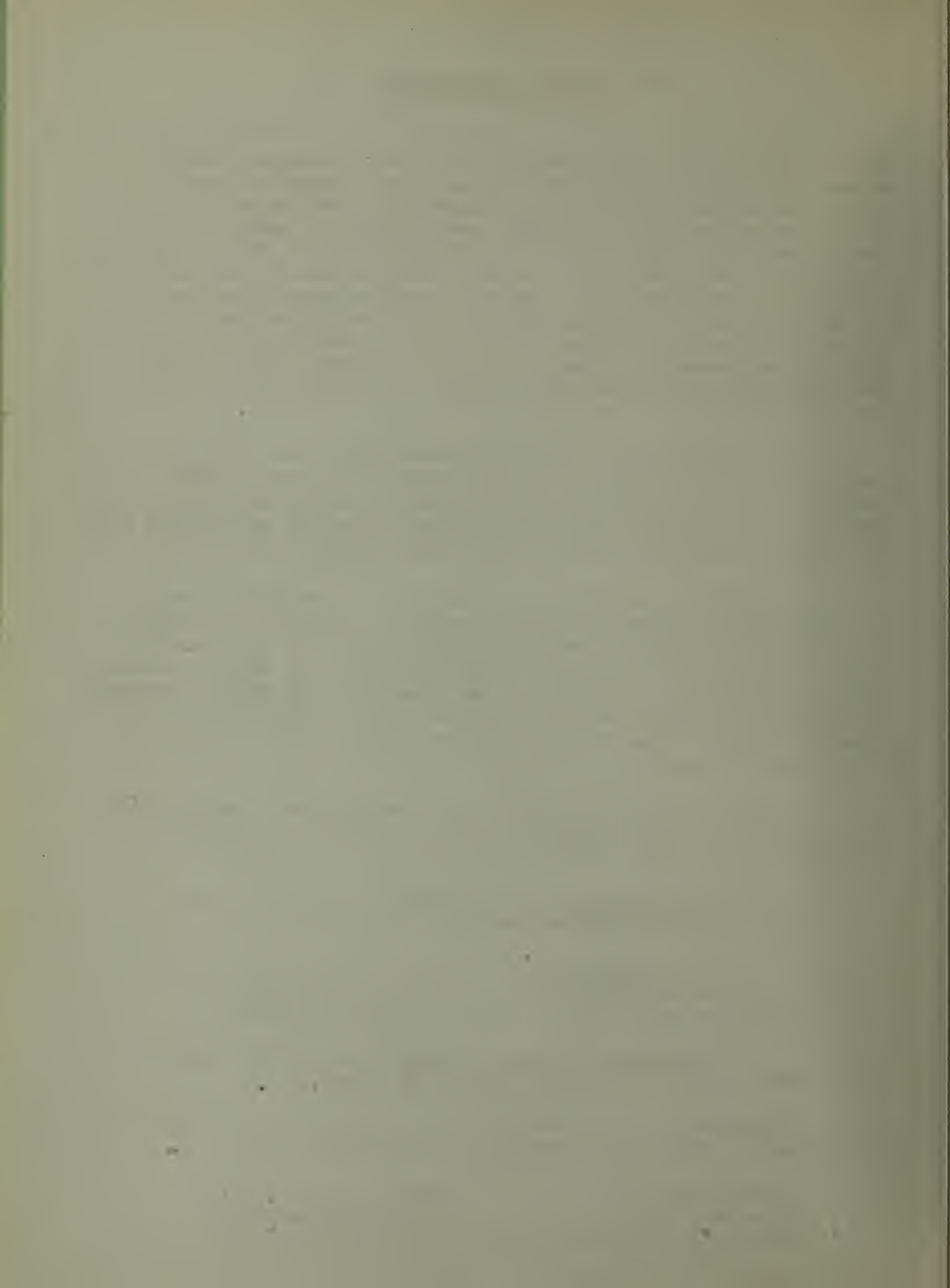
(1) In-Bound Trips: Trips from home, or to work or part of the home-to-work movement complex.

(2) "Trips Around Town": Trips taken in the course of the day's work, or from point to point while away from home and neither en route from home to work or from work to home.

(3) Home-Bound and Out-Bound Trips: Trips from work and to home or part of the work-to-home movement complex.

A breakdown of the B.A.M.T.S. data by the staff of the Department of City Planning into these classifications gave the following data:

In-Bound Trips:	549,263 (40.1% of total)
Trips Around Town:	230,204 (16.8% of total)
Home-Bound and Out-Bound Trips:	591,178 (43.1% of total)



### In-Bound Type Trips

Almost half (48.7 per cent) of all trips that fell into the "In-Bound" classification were trips from home to work, including trips involving stops to eat meal, shop, see a doctor, or engage in social and recreational activities en route. Public transit accounted for a large majority (57.6 per cent) of these trips, and was highest (59.3 per cent) for trips directly from home to work.

Shopping trips starting from home (9.8 per cent of the total in-bound trips) involved a majority movement by public transit (51.1 per cent), in 1947. This gives a higher proportion of shoppers moving by transit than is popularly thought to be the case. Even allowing for the shift from transit to autos from 1947 to 1954, discussed below, a substantial portion of our shoppers still move by public transit.

Transit scored low on trips to eat meals (21.2 per cent) and trips for social and recreational purposes (34.0 per cent). Obvious advantages can be cited as to why private autos would be made use of for recreation:

(1) Recreation travel tends to be made in groups, and as more people are added to the passenger list, auto travel becomes more economical.

(2) Out-of-the-way places can be reached by direct routing of auto travel, "express" scheduling, and no waiting on dark corners for transfers.

(3) Privacy: A public bus is a difficult place in which to carry on a courtship, or a conversation on religious philosophy, whereas a private auto is like one's own living room.

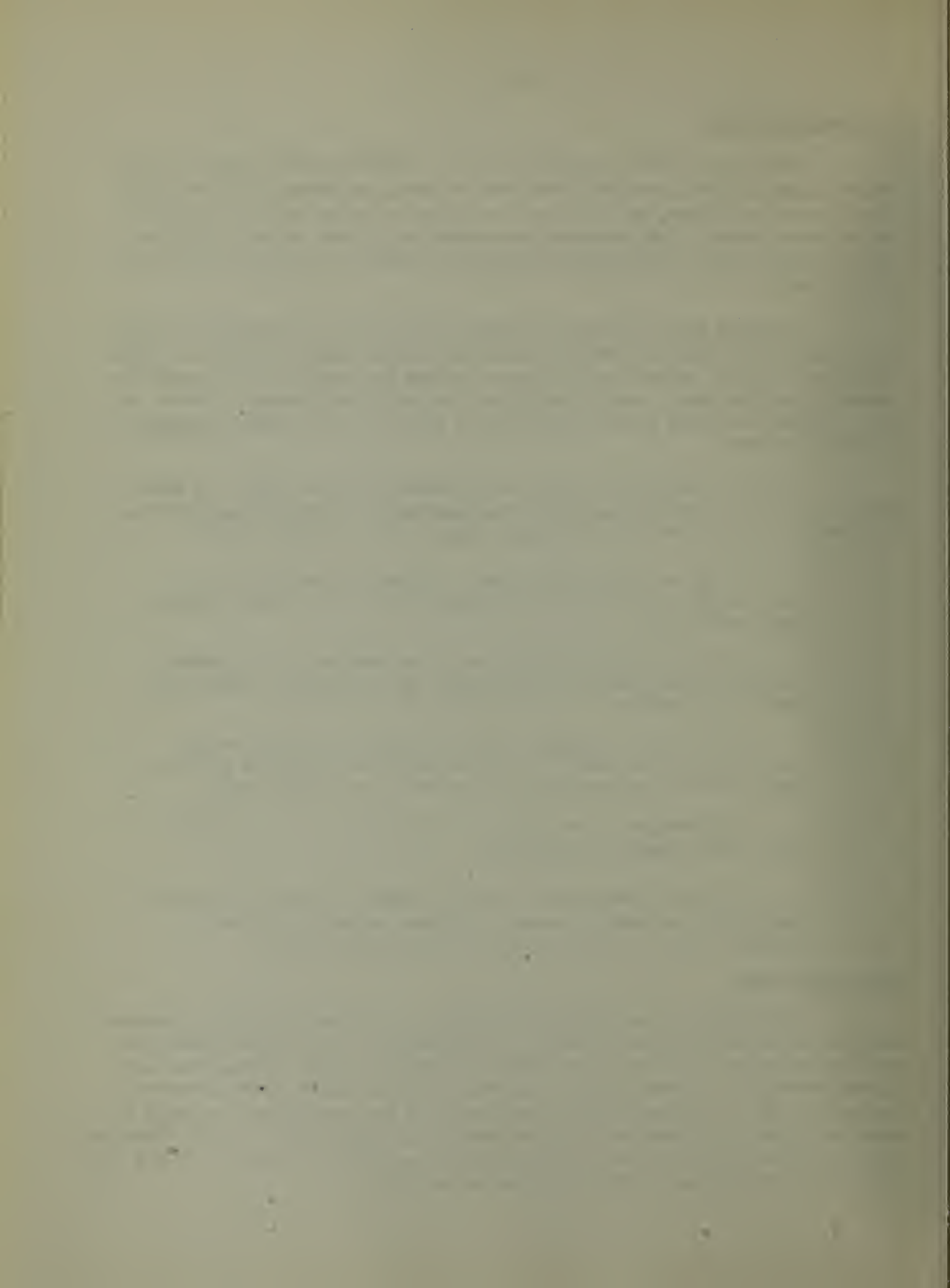
(4) Prestige: Few young women like to be taken to a dance in a formal gown on a street car.

(5) Sunday and holiday "riding around" is almost exclusively by private automobile, whereas in former years the "excursion trolley" was a favorite means of recreational travel.

### Trips Around Town

The largest group of daily trips that is neither part of the home-to-work nor of the work-to-home patterns of movement (or "trips around town") is the classification named in the B.A.M.T.S. as "work-to-work" trips. This includes trips taken by contractors, doctors, salesmen, plumbers, repair crews and service men of various sorts in the course of the day's work. As might be expected, these trips were nine-tenths private automobile trips. In San Francisco, they accounted for 102,017 work destination trips, out of a total of 374,416 trips with work destinations, or 27.2 per cent of the total.





Since these "on-the-job" trips are almost exclusively by private auto, their inclusion in total work destination data inflates the proportion of auto use in work trips where all daily trips are divided into "trips to work" and "other trips." In data on particular districts in San Francisco, and in the 1954 Bay Region rapid transit survey, and from surveys in other cities where these two basic breakdowns are made into "work trips" and "other trips", the proportion of commuters who use public transit in going from home to work and back again is actually considerably higher than is shown because of this inclusion of auto-on-the-job trips in the total category of work trips.

In all of the other trip classifications in the "trips-around-town" group, public transit plays a minor role, except for trips for medical or dental attention, and trips to school, both of which account for very small percentages of the total number of trips in the group.

#### Home-Bound or Out-Bound Trips

The high use of public transit in peak-hour commute-type service is again illustrated in tabulations for trips direct from places of work to home (60.2 per cent), these trips constituting 38.1 per cent of the out-bound trip group. Almost half of the trips home from shopping (48.8 per cent) were also by public transit, and other trips home with high transit use included trips from school (81.2 per cent), from medical or dental attention (66.6 per cent) and from transacting business (50.5 per cent).

Lowest transit usage in the home-bound group was found in trips home from recreational and social activities (28.5 per cent), and from eating meal (21.9 per cent).

From the above data we can make a definite conclusion that in 1947 a clear majority of San Franciscans (and others with daily trip destinations in San Francisco) made home-to-work and work-to-home movements by public transit. Home-to-shop and shopping-to-home trips were about half by transit, half by private auto. School and medical attention trips showed strong transit patronage. Social, recreation, and eating trips showed high automobile usage, however, and trips taken in the course of day's work are almost exclusively by private automobile.



# DAILY TRIPS IN SAN FRANCISCO

## BY TYPE AND PURPOSE

### DAILY TRIPS STARTING AT HOME

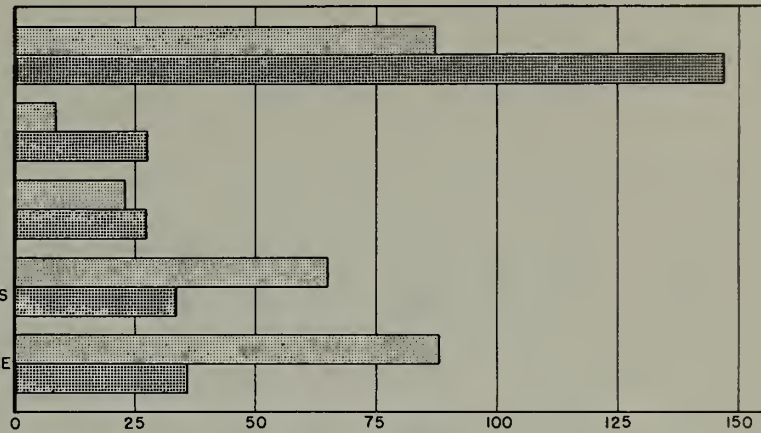
TO WORK

TO SCHOOL

TO GO SHOPPING

TO SOCIAL AND RECREATIONAL ACTIVITIES

OTHER TRIPS FROM HOME



### DAILY TRIPS ENDING AT HOME

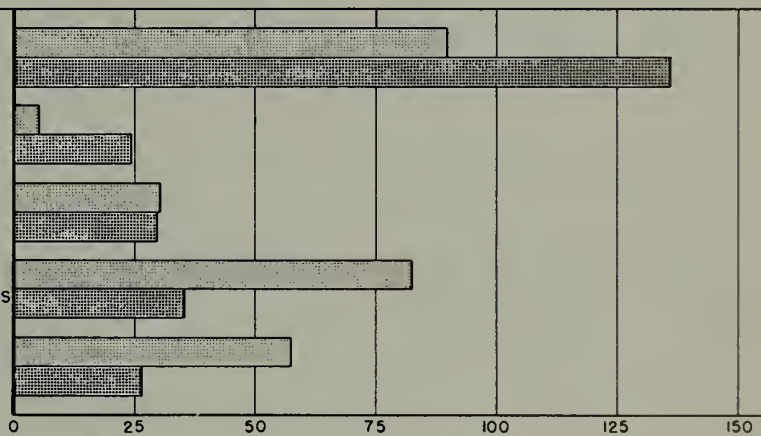
FROM WORK

FROM SCHOOL

FROM SHOPPING

FROM SOCIAL AND RECREATIONAL ACTIVITIES

OTHER TRIPS TO HOME



### DAILY TRIPS AROUND TOWN

TAKEN IN COURSE OF DAYS WORK

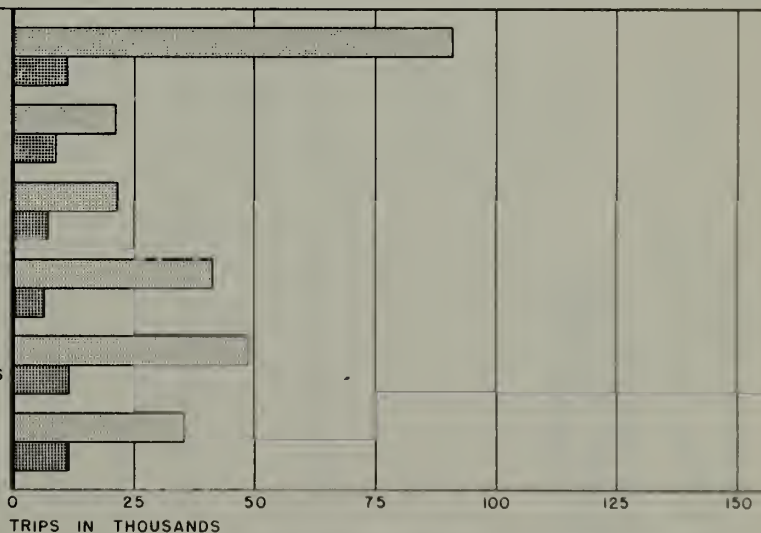
FOR TRANSACTING BUSINESS

FOR SHOPPING

FOR ERRANDS - MEDICAL, DENTAL, ETC.

FOR SOCIAL AND RECREATIONAL ACTIVITIES

MISCELLANEOUS TRIPS ORIGINATING AT WORK



TRIPS IN THOUSANDS

SOURCE : CALIFORNIA STATE DIVISION OF HIGHWAYS,  
BAY AREA METROPOLITAN TRAFFIC SURVEY,  
TYPICAL WEEKDAY, 1947

AUTOMOBILE

TRANSIT





TABLE 1

PURPOSES OF DAILY TRIPS WITH DESTINATIONS IN SAN FRANCISCO, 1947  
(Typical Week Day, 1947, 24 hours)

Source: California State Division of Highways  
Bay Area Metropolitan Traffic Survey -- June, 1949, Table 3

PURPOSE OF DAILY TRIP	TOTAL DAILY TRIPS, 1947 (Typical Week Day 24 hrs)		DAILY TRIPS BY AUTO		DAILY TRIPS BY PUBLIC TRANSIT	
	Number	Per Cent Of Total	Number	Per Cent By Auto	Number	Per Cent by Transit
Total Daily Trips in 1947 Destinations in San Francisco	<u>1,370,645</u>	<u>100.0%</u>	<u>794,220</u>	<u>58.0%</u>	<u>576,425</u>	<u>42.0%</u>
Trips to Work and on-the-job trips	374,416	27.3%	207,615	55.5%	166,801	44.5%
Trips to Transact Business	56,044	4.1%	33,011	58.9%	23,033	41.1%
Trips to get Medical or Dental Attention	15,020	1.1%	5,499	36.6%	9,521	63.4%
Trips to School	39,025	2.8%	10,131	26.0%	28,894	74.0%
Trips for Social and Recreational Pur- poses	166,758	12.2%	119,118	71.4%	47,640	28.6%
Trips to Eat Meal	26,690	1.9%	21,495	80.5%	5,195	19.5%
Trips to Shop	84,516	6.2%	48,221	57.0%	36,295	43.0%
Trips to "Change Travel Mode" (park car & take bus downtown, or trips to airport or railway station)	17,000	1.2%	9,253	54.4%	7,747	45.6%
Trips to "Serve Passenger" (take some- body to place other than driver's destination)	75,417	5.5%	75,177	99.7%	240	0.3%
Trips to Home	515,759	37.7%	264,700	51.3%	251,059	37.7%

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516	517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577	578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608	609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	637	638	639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669	670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730	731	732	733	734	735	736	737	738	739	740	741	742	743	744	745	746	747	748	749	750	751	752	753	754	755	756	757	758	759	760	761	762	763	764	765	766	767	768	769	770	771	772	773	774	775	776	777	778	779	780	781	782	783	784	785	786	787	788	789	790	791	792	793	794	795	796	797	798	799	800	801	802	803	804	805	806	807	808	809	810	811	812	813	814	815	816	817	818	819	820	821	822	823	824	825	826	827	828	829	830	831	832	833	834	835	836	837	838	839	840	841	842	843	844	845	846	847	848	849	850	851	852	853	854	855	856	857	858	859	860	861	862	863	864	865	866	867	868	869	870	871	872	873	874	875	876	877	878	879	880	881	882	883	884	885	886	887	888	889	890	891	892	893	894	895	896	897	898	899	900	901	902	903	904	905	906	907	908	909	910	911	912	913	914	915	916	917	918	919	920	921	922	923	924	925	926	927	928	929	930	931	932	933	934	935	936	937	938	939	940	941	942	943	944	945	946	947	948	949	950	951	952	953	954	955	956	957	958	959	960	961	962	963	964	965	966	967	968	969	970	971	972	973	974	975	976	977	978	979	980	981	982	983	984	985	986	987	988	989	990	991	992	993	994	995	996	997	998	999	1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	1010	1011	1012	1013	1014	1015	1016	1017	1018	1019	1020	1021	1022	1023	1024	1025	1026	1027	1028	1029	1030	1031	1032	1033	1034	1035	1036	1037	1038	1039	1040	1041	1042	1043	1044	1045	1046	1047	1048	1049	1050	1051	1052	1053	1054	1055	1056	1057	1058	1059	1060	1061	1062	1063	1064	1065	1066	1067	1068	1069	1070	1071	1072	1073	1074	1075	1076	1077	1078	1079	1080	1081	1082	1083	1084	1085	1086	1087	1088	1089	1090	1091	1092	1093	1094	1095	1096	1097	1098	1099	1100	1101	1102	1103	1104	1105	1106	1107	1108	1109	1110	1111	1112	1113	1114	1115	1116	1117	1118	1119	1120	1121	1122	1123	1124	1125	1126	1127	1128	1129	1130	1131	1132	1133	1134	1135	1136	1137	1138	1139	1140	1141	1142	1143	1144	1145	1146	1147	1148	1149	1150	1151	1152	1153	1154	1155	1156	1157	1158	1159	1160	1161	1162	1163	1164	1165	1166	1167	1168	1169	1170	1171	1172	1173	1174	1175	1176	1177	1178	1179	1180	1181	1182	1183	1184	1185	1186	1187	1188	1189	1190	1191	1192	1193	1194	1195	1196	1197	1198	1199	1200	1201	1202	1203	1204	1205	1206	1207	1208	1209	1210	1211	1212	1213	1214	1215	1216	1217	1218	1219	1220	1221	12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TABLE 2

## PURPOSES OF DAILY TRIPS FROM HOME

TO DESTINATIONS IN SAN FRANCISCO, TYPICAL WEEK DAY, 1947, 24 HOURS

Sources: California State Division of Highways  
 Bay Area Metropolitan Traffic Survey -- June, 1949, Table 3

PURPOSE OF TRIP FROM HOME	TOTAL DAILY TRIPS FROM HOME - 1947			DAILY TRIPS BY AUTO			DAILY TRIPS BY PUBLIC TRANSIT		
	Number	Per Cent of Total		Number	Per Cent By Auto		Number	Per Cent by Transit	
Total Daily Trips From Home*	549,263	100.0%		277,624	50.5%		271,639	49.5%	
With destinations in San Francisco, typical weekday 1947 (24 hours)									
Trips from Home to Work*	267,359	48.7%		113,355	42.4%		154,004	57.6%	
(a) Direct from Home to Work	250,842	45.7%		102,013	40.7%		148,829	59.3%	
(b) From Home to Work with stop to eat meal, shop, go to school, see doctor, or engage in social or recreational activities.	16,517	3.0%		11,342	68.7%		5,175	31.3%	
Trips From Home to Transact Business	33,124	6.0%		16,815	50.8%		16,309	49.2%	
Trips From Home for Medical or Dental Services	12,025	2.2%		4,414	36.7%		7,611	63.3%	
Trips from Home to School	37,140	6.8%		9,308	25.0%		27,832	75.0%	
Trips from Home for Shopping	53,617	9.8%		26,233	48.9%		27,384	51.1%	
Trips from Home to Eat Meal	6,808	1.2%		5,364	78.8%		1,444	21.2%	
Trips for Social and Recreational Purposes	98,093	17.9%		64,729	66.0%		33,364	34.0%	
Trips to "Change Travel Mode"**(i.e., auto to transit terminal, or trips to airport or R. R. depot)	7,905	1.4%		4,334	54.8%		3,571	45.2%	
Trips "To Serve Passenger" (take child to school, etc.)**	33,192	6.0%		33,072	99.6%		120	0.4%	

NOTE: \*Includes trips "from 'Serve Passenger' to Work" and "from 'change travel mode' to Work" which are assumed to have started from home or to have been first trip of the day.

\*\* Does not include amount of trips included in note above.

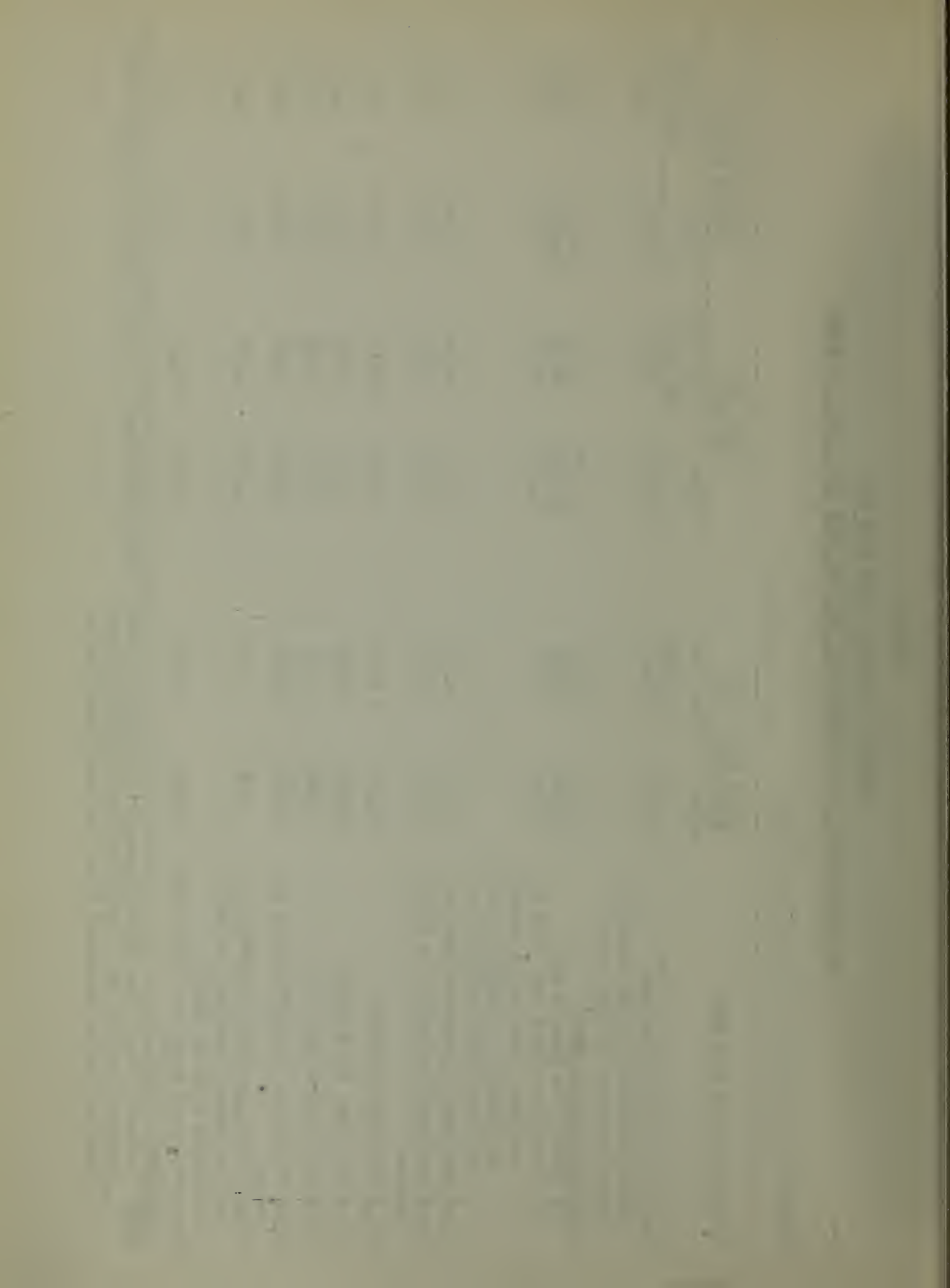


TABLE 3

## PURPOSES OF DAILY "TRIPS AROUND TOWN"

TO DESTINATIONS IN SAN FRANCISCO, TYPICAL WEEK DAY, 1947, 24 HOURS

Sources: California State Division of Highways  
Bay Area Metropolitan Traffic Survey June, 1949, Table 3

PURPOSE OF TRIP	TOTAL DAILY TRIPS "AROUND TOWN" 1947		DAILY TRIPS BY AUTO		DAILY TRIPS BY PUBLIC TRANSIT	
	Number	Per Cent of Total	Number	Per Cent by Auto	Number	Per Cent by Transit
Total Daily Trips "Around Town"	<u>230,204</u>	<u>100.0%</u>	<u>187,395</u>	<u>81.4%</u>	<u>42,809</u>	<u>18.6%</u>
with destinations in San Francisco, 1947, Typical Week day, (24 hours)-- trips neither originating nor ending at home						
Trips "From Work to Work" (on-the-job trips, such as undertaken by contrac- tors, architects, doctors, utilities crews, salesmen, deliverymen, etc.)	102,017	44.4%	90,927	89.1%	11,090	10.9%
Trips to Transact Business	22,159	9.6%	15,556	70.2%	6,603	29.8%
Errand Trips and Downtown-Shopping	47,986	20.8%	33,973	70.8%	14,013	29.2%
Type Trips						
(a) To see Doctor or Dentist	2,995	1.3%	1,085	36.2%	1,910	63.8%
(b) To Eat Meal	19,882	8.6%	16,131	81.0%	3,751	19.0%
(c) To Shop	19,368	8.4%	12,844	66.3%	6,524	33.7%
(d) Other	5,741	2.5%	3,913	68.1%	1,828	31.9%
Trips to School	1,906	0.8%	823	43.2%	1,083	56.8%
Trips to Social and Recreational Activi- ties	56,136	24.4%	46,116	82.1%	10,020	17.9%



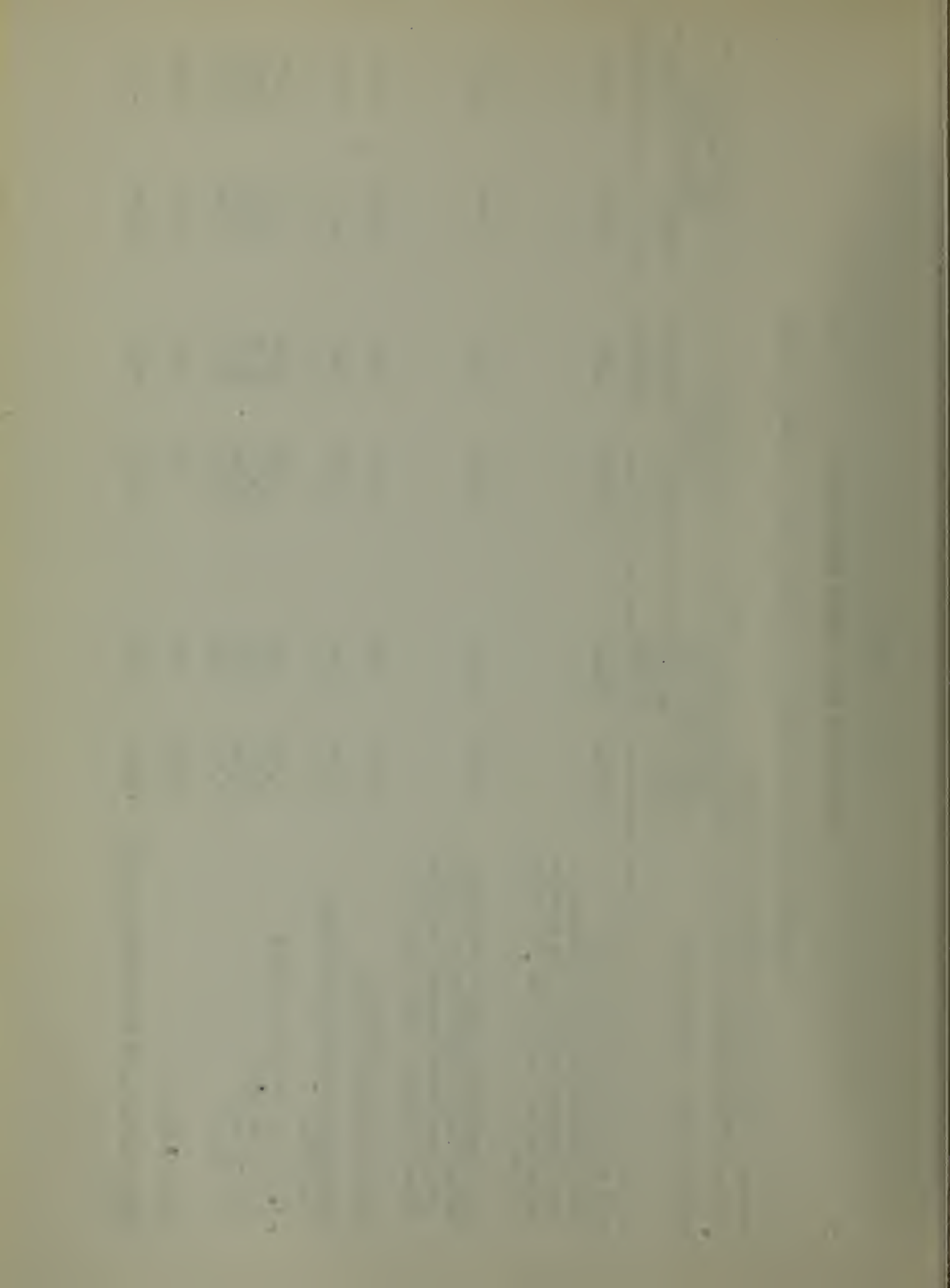


TABLE 4

PURPOSES OF DAILY HOME-BOUND AND OUT-BOUND TRIPS  
TO DESTINATIONS IN SAN FRANCISCO, TYPICAL WEEK DAY, 1947, 24 HOURS

Source: California State Division of Highways  
Bay Area Metropolitan Traffic Survey -- June, 1949, Table 3

PURPOSE OF HOME-BOUND OR OUT-BOUND DAILY TRIPS	TOTAL DAILY TRIPS HOME- BOUND AND OUT-BOUND, 1947		DAILY TRIPS BY AUTO		DAILY TRIPS BY PUBLIC TRANSIT	
	Number	Per Cent of Total	Number	Per Cent by Auto	Number	Per Cent by Transit
Total Home-Bound and Out-Bound Type Trips, Daily, Typical Week Day with Destinations in San Francisco, 1947, (24 hrs.)	591,178	100.0%	329,201	55.7%	261,977	44.3%
Out-Bound Trips from Work Places	251,947	42.6%	111,114	44.1%	140,833	55.9%
(a) From Work Direct to Home	225,389	38.1%	89,610	39.8%	135,779	60.2%
(b) From Work to Social-Recreational Activities	8,835	1.5%	5,765	65.2%	3,070	34.8%
(c) From Work to "Change Travel Mode" (catch plane, etc.)	4,273	0.7%	2,329	54.5%	1,944	45.5%
(d) From Work to "Serve Passenger" (take stenog. home)	13,450	2.3%	13,410	99.7%	40	0.3%
Out-Bound Trips from Transacting Business	32,606	5.5%	17,578	53.9%	15,028	46.1%
(a) Direct to Home	26,843	4.5%	13,282	49.5%	13,561	50.5%
(b) To Social-Recreational Activities	3,694	0.6%	2,508	69.7%	1,186	32.1%
(c) To Serve Passenger and Change Travel Mode	2,069	0.7%	1,788	86.4%	281	13.6%
Trips Home from Medical Attention	10,561	1.8%	3,530	33.4%	7,031	66.6%
Trips Home from School	29,689	5.0%	5,575	18.8%	24,114	81.2%
Trips Home from Shopping	62,766	10.6%	32,154	51.2%	30,612	48.8%
Trips Home from Eating Meal	9,362	1.6%	7,314	78.1%	2,048	21.9%
Trips Home from Social-Recreational Activities	126,398	21.4%	90,406	71.5%	35,992	28.5%
Miscellaneous Outbound Trips (including "Serve Passenger" "Change Travel Mode" etc.)	67,849	11.5%	61,530	90.6%	6,319	9.4%



#### IV. DESTINATIONS OF DAILY TRIPS. WHERE PEOPLE GO IN SAN FRANCISCO ::

More than half of the daily trips undertaken on a typical week day in 1947 (7 AM to 7 PM) in San Francisco were bound for points in the Metropolitan Traffic District (54.1 per cent). This is the area surrounding the Central Business District, that roughly corresponds to the outer boundaries of the following districts: North Embarcadero, Financial, Downtown Shopping and Entertainment, Uptown Shopping (Civic Center-Van Ness), South-of-Market. (See chart 2). This proportion does not include trips to home, and was derived from a special tabulation made for the City of San Francisco by the State Division of Highways from B.A.M.T.S. data in 1947, and from data from the Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers in San Francisco, January 1948.

The daily trip destinations in the Metropolitan Traffic District amounted to 426,758, or slightly more than half the city's population. Within the Central Business District itself (Financial District and Downtown Shopping and Entertainment District), a total of 232,580 persons had daily trip destinations (29.5 per cent of the total daily trips excluding trips to home) -- a fairly high concentration of persons for an area comprising only a little more than half a square mile. (See Table 5).

San Francisco's industrial areas (North Embarcadero, South-of-Market, Potrero Industrial and Bayshore Industrial) accounted for 21.9 per cent of all trip destinations on a typical week day. Potrero and Bayshore Industrial Districts located to the southeast and outside of the Metropolitan Traffic District attracted only 6.5 per cent of the total.

About 40 per cent of the city's total daily trips (except trips to home) were to points within the residential community areas, such as the Richmond, Mission, Sunset, or Western Addition, and to shopping districts, employment centers, or individual personal destinations within them.

Close to 16 per cent of the daily trip destinations in San Francisco were from trips originating in other cities or communities in the Bay Region. In the Financial District the proportion of suburban trip origin was highest, being over 28 per cent. Bay Area trips constituted 15 per cent of those ending up in the Downtown Shopping and Entertainment District, and about 13 per cent of all other districts, including the residential community areas (except the North Embarcadero Industrial District where 20 per cent of trip origins were from outside San Francisco).

Daily trips undertaken by public transit were destined largely to the downtown districts of the Metropolitan Traffic District (73 per cent), while a majority of daily automobile trips were to other parts of the city (only 41 per cent of auto trips being to the M.T.D.).

THE HISTORY OF THE UNITED STATES OF AMERICA

The history of the United States of America is a story of growth and development. It begins with the first settlers who came to the continent in search of a new home. They found a land of vast resources and opportunities, but also one of many challenges. The early years were marked by conflict and struggle, as the settlers fought to establish a new society in a remote and often hostile environment. Over time, the United States grew from a small collection of colonies into a powerful nation, with a rich and diverse culture. The story of the United States is a testament to the power of the human spirit and the ability of a people to overcome adversity and build a better future.

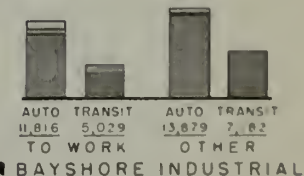
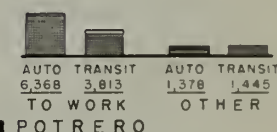
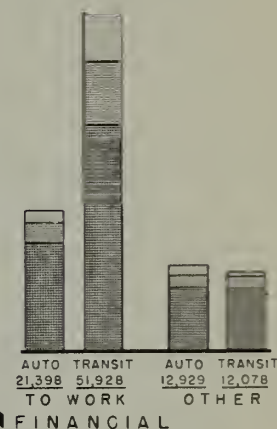
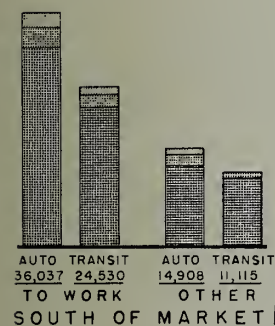
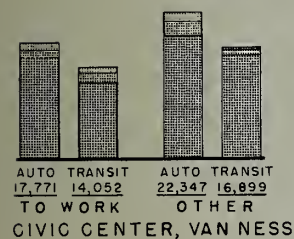
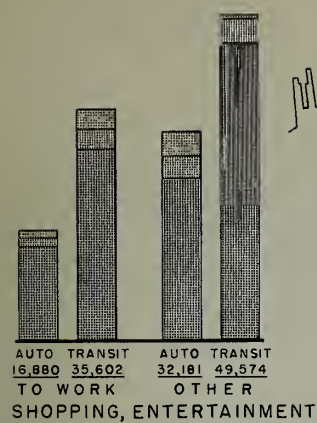
The United States has a long and proud history of freedom and democracy. From the first settlers to the present day, the American people have fought to protect their rights and liberties. The Constitution, the foundation of our nation, guarantees the rights of all citizens and provides a framework for the government. The American people have shown a remarkable ability to adapt to change and to overcome the challenges of the world. The history of the United States is a story of hope and optimism, of a people who believe in a better future for themselves and for the world.

The United States has played a leading role in the world for many years. From the American Revolution to the present day, the United States has been a force for good and progress. The American people have shown a commitment to peace and justice, and to the well-being of the world. The United States has been a leader in the development of science and technology, and in the promotion of human rights. The history of the United States is a story of achievement and accomplishment, of a people who have made a significant contribution to the world.

The United States is a nation of many peoples, many cultures, and many languages. The American people are a mix of many different backgrounds and traditions, and this diversity is one of the strengths of the United States. The American people have shown a remarkable ability to come together and to work for the common good. The history of the United States is a story of unity and cooperation, of a people who have built a great nation out of many different parts.

The United States is a nation of hope and dreams. The American people believe in a better future for themselves and for the world. The history of the United States is a story of progress and achievement, of a people who have made a significant contribution to the world. The United States is a nation of many peoples, many cultures, and many languages, and this diversity is one of the strengths of the United States. The American people have shown a remarkable ability to come together and to work for the common good. The history of the United States is a story of unity and cooperation, of a people who have built a great nation out of many different parts.





Sources: (1) Bay Area Metropolitan Traffic Survey  
Special Tabulation for S.F. Transportation Survey 1948  
(2) Origin-Destination Survey of  
S.F. Greyhound Passengers, S.F. AT. Council 1948

## DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

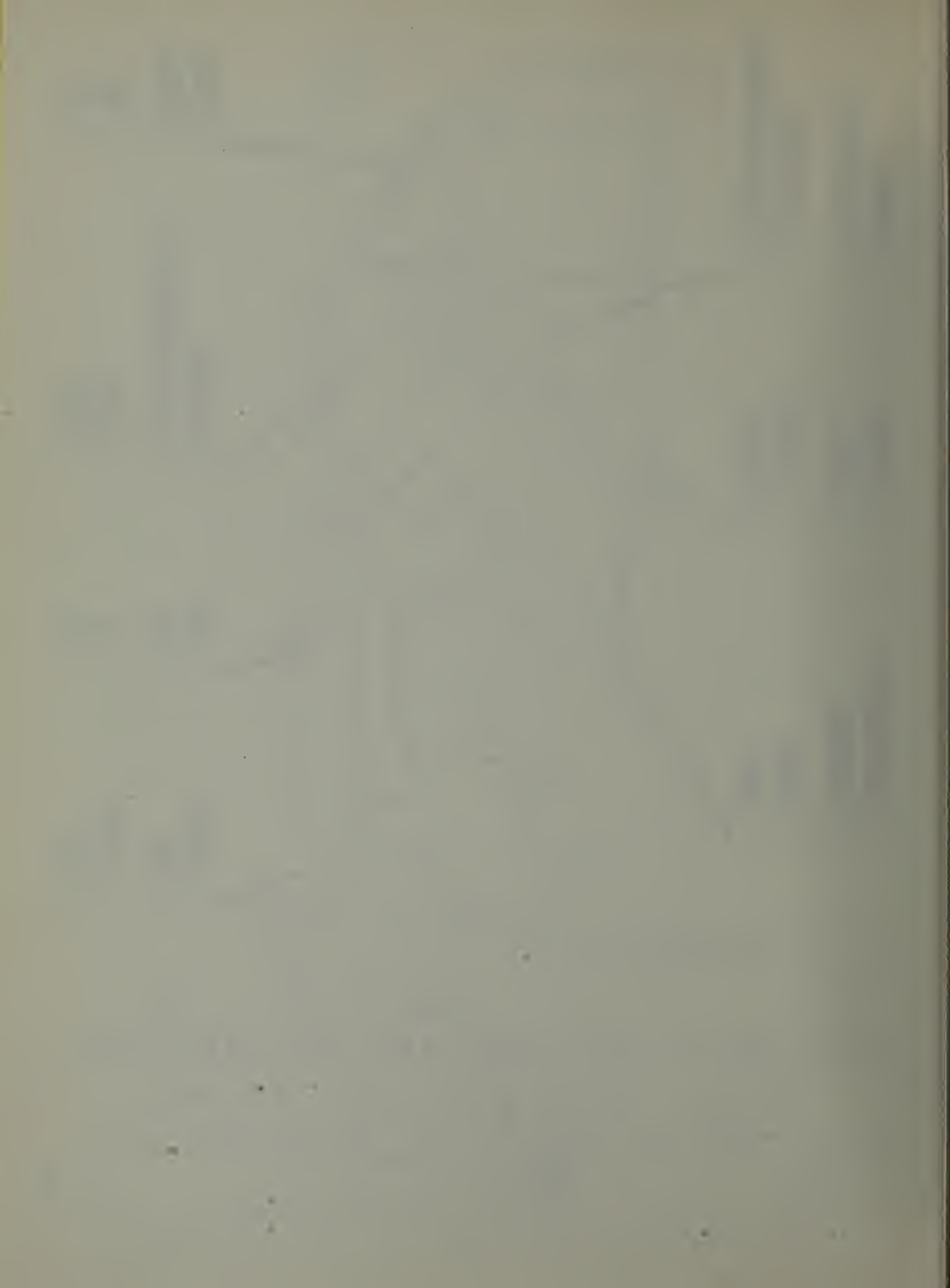
### TOTAL NUMBER OF TRIPS

ORIGINS WITHIN SAN FRANCISCO AND FROM BAY AREA POINTS

TYPICAL  
WEEKDAY,  
1947  
7am to 7pm



PLATE 2



To the Financial District, 65 per cent went by public transit, and 63.5 per cent of all those going to the Downtown Shopping and Entertainment District came by public transit. Only 34.3 per cent of those going to industrial districts rode street cars or buses, however, and in trips with destinations in residential community areas riders used public transit only in 22.3 per cent of the cases.

### "Trips Downtown" in San Francisco

Although 232,580 persons had trip destinations in San Francisco's Central Business District on a typical week day in 1947, estimates based on Cordon Count Data, Metropolitan Traffic District, San Francisco (cited above, see page 3) showed about 380,000 persons entering and leaving the district. The additional amount represents pedestrians, truck drivers (not included in our daily trips analyses), persons passing through the district, and a certain amount of "going back and forth across the line" on the part of purely local travellers within a particular district that would get counted by an enumerator but might not get included in trips tabulated in an interview survey.

The Metropolitan Traffic District was the daily trip destination of 426,758 persons on a typical week day in 1947. Total cordon count entrances approximated 535,286 persons, and it is estimated that in 1954 this figure would be about 540,000.

"Accumulations" of persons within the Metropolitan Traffic District were measured in the 1947 Cordon Count varying from 21,264 at 7:30 A.M. (over and above the estimated 50,000 persons who were in the area at 7 A.M.) to 174,838 at 2 P.M. (making an estimated total "daytime population" of the area to be 224,838). This is considerably lower than either the number of trip destinations, or the number of persons entering (and leaving) the area, since many people would be within the M.T.D. only for a few hours, and there would be a fairly high "turnover" of shoppers in particular. Even persons working in the area might be out of it for good portions of the day, or might go in and out of it several times. In surveys of parking facilities undertaken in the 1948 transportation survey, it was found that curb parking spaces saw a daily turnover of from 2.5 to 8.0 vehicles per space, and that off-street stalls saw an average turnover of from 1.3 to 3.0 vehicles. This would indicate the "turn-over" of persons within the central core areas, also.

Thus at the mid-day peak at 2 P.M., we would find a number of persons equal to more than one-fourth its total population congregated in its downtown core. More than half of its population would have had work, business, or errands in it at some time during the business day.

### "Trips Downtown" from 1912 to 1954 (See Plate 3 and Table 6)

Large crowds of San Franciscans and Bay Area residents have been attracted to Downtown San Francisco from the very earliest days. In 1912 we find that about 300,000 persons entered the Central Business District on a

THE UNIVERSITY OF CHICAGO  
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TEL: (773) 835-5100 FAX: (773) 835-5101

MEMORANDUM FOR THE RECORD

TO: THE CHAIRMAN, DEPARTMENT OF CHEMISTRY  
FROM: [Name]  
SUBJECT: [Subject]

On [Date], [Name] and I discussed the progress of the work on [Subject]. [Name] reported that the results of the experiments performed to date are consistent with the hypothesis that [Hypothesis]. [Name] also reported that the results of the theoretical calculations performed to date are consistent with the hypothesis that [Hypothesis].

The results of the experiments performed to date are consistent with the hypothesis that [Hypothesis]. The results of the theoretical calculations performed to date are consistent with the hypothesis that [Hypothesis].

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typical week day from 7 AM to 7 PM.<sup>1</sup> Fourteen years later, in 1926, this number had increased about 10 per cent to 332,356 persons entering the C.B.D. between 7 AM and 7 PM.<sup>2</sup> By 1937, a slight decrease was noted, only 326,857 entering the C.B.D. on a typical week day between 7 and 7.<sup>3</sup> (See Table 6).

The estimate for daily entrances today into the Central Business District of about 400,000 (actual counts are found only for the larger Metropolitan Traffic District) indicates an increase of about 33 per cent in those "going Downtown" in San Francisco since 1912. San Francisco's 1947 population is estimated to have been 785,000, an increase of 87 per cent over its 1912 estimated population of about 420,000. During the same period, the rest of the San Francisco Bay Region more than tripled in population, having about 525,000 persons in 1912 and about 1,700,000 persons in 1947.

This does not necessarily reflect a decrease in the importance of San Francisco's Downtown District, since a recent study, "Daily Movements of Population into Business Districts" by Professor Donald L. Foley of the Department of City and Regional Planning, University of California, shows that the larger the metropolitan area, the smaller the proportion of the metropolitan area's total population that will enter its central business district every week day.<sup>4</sup> This reflects dispersal of shopping facilities and employment centers as metropolitan areas became enlarged in area, and population centers became further removed from Downtown. Then, central business districts tend to become specialized, and the community shopping areas, (as, in San Francisco, centers such as Mission Street, Fillmore Street, Lakeside Village, West Portal, Geary Boulevard, Lakeshore Plaza, and Stonestown) tend to satisfy every-day shopping needs for standard purchase items.

Another interesting factor found in Professor Foley's study was that proportion of those with destinations in Central Business Districts to total entering was higher for central cores of metropolitan areas than for smaller cities. Likewise, ratio of C.B.D. accumulations to destinations and to total entrances was higher for larger metropolitan areas.

As the number of private automobiles in San Francisco has increased since 1912, the proportion of people travelling to the Central Business District by private auto has likewise increased, and proportions using public transit has declined. Whereas an estimated 82.6 per cent of persons entering the Central Business District in 1912 used public transit, this figure progressively declined to 70 per cent in 1926, 58.8 per cent in 1937, and rose slightly to 60.8 per cent in 1947. The "decline of transit" has been least noticeable in areas like San Francisco's Central Business District where high transit riding habit continues to be the pattern, as opposed to outlying districts, discussed elsewhere in this report, where transit patronage accounts for between one-third and one-fourth of the total daily trips.

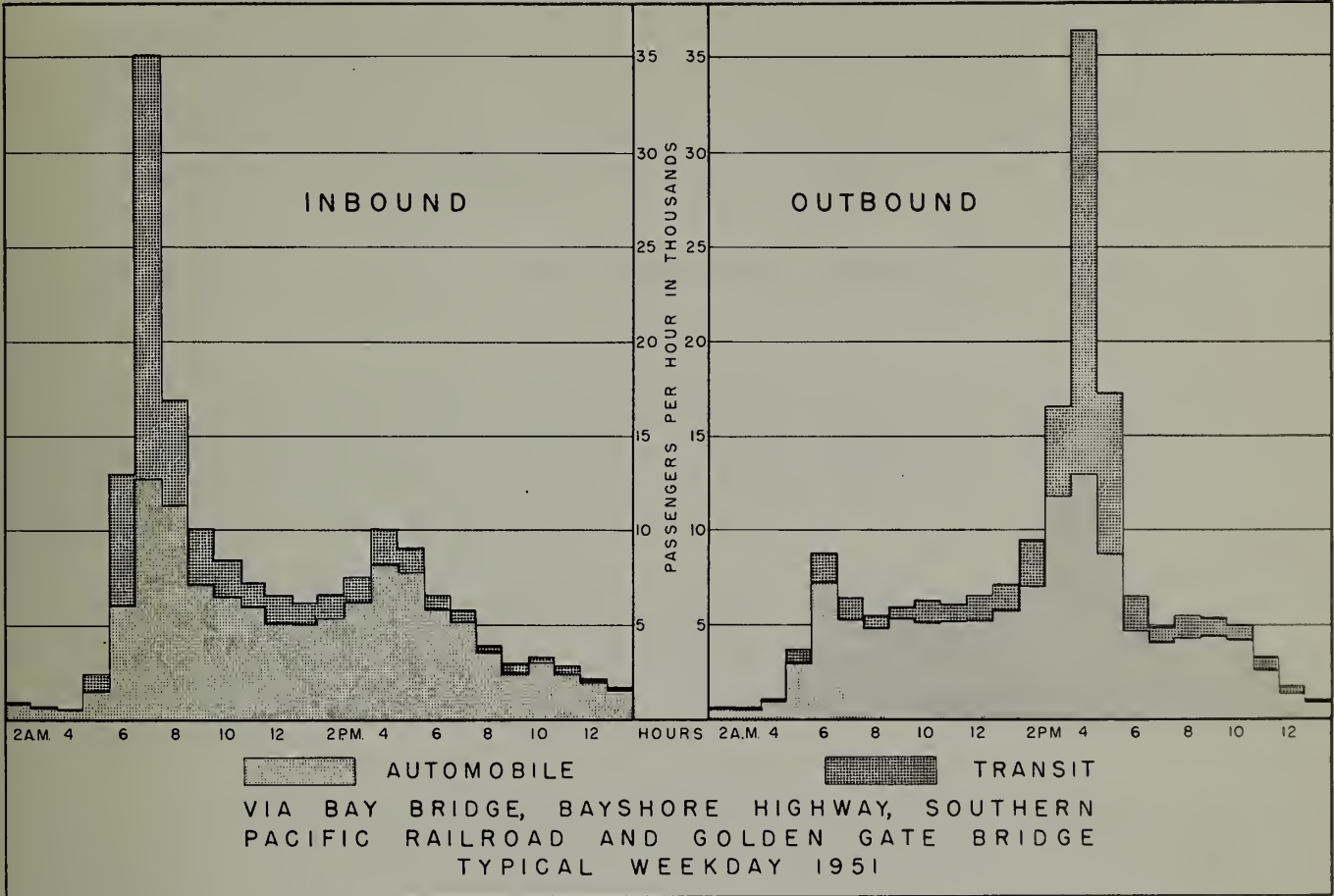
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<sup>1</sup> Report on Transportation Facilities of San Francisco, 1913. Bion J. Arnold  
<sup>2</sup> The City-Wide Traffic Control Problem of San Francisco, 1926. Miller McClintock.  
<sup>3</sup> The City-Wide Traffic Survey. 1937. Miller McClintock for S.F. Dept of Public Works.  
<sup>4</sup> Donald L. Foley. "The Daily Movement of Population into Central Business Districts." American Sociological Review Vol. 17, No. 5, Oct. 1952, pp. 538-543.



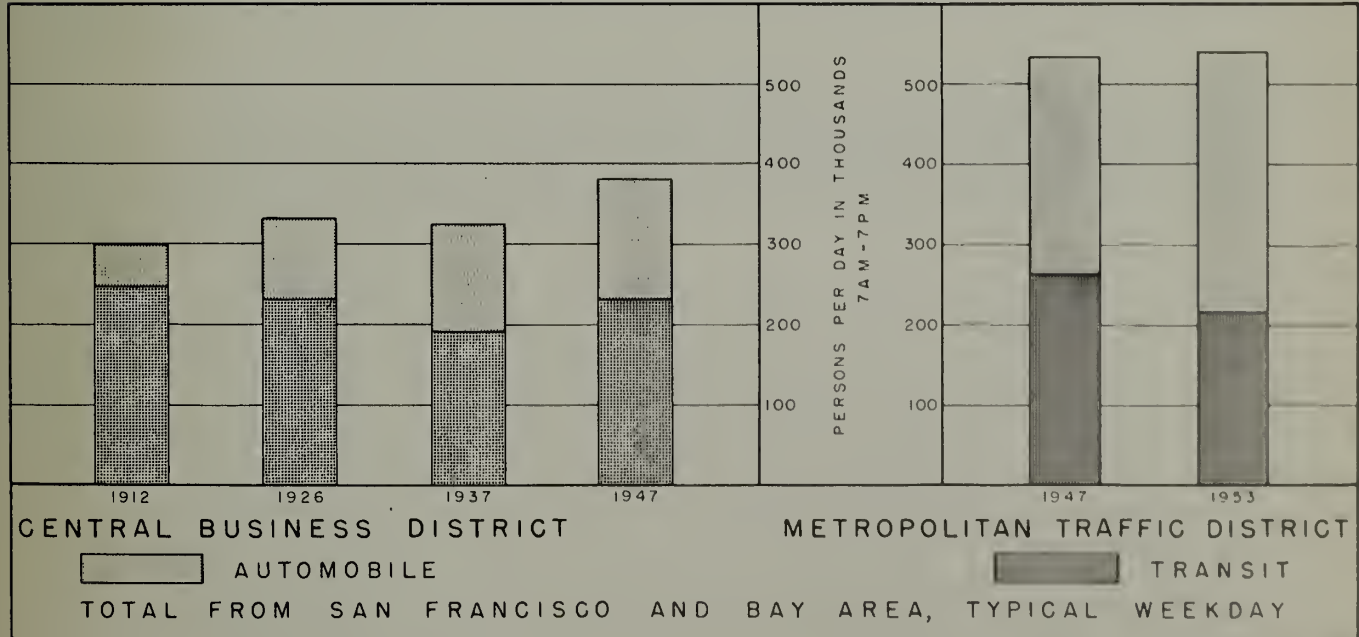


PASSENGER TRAFFIC TO AND FROM SAN FRANCISCO

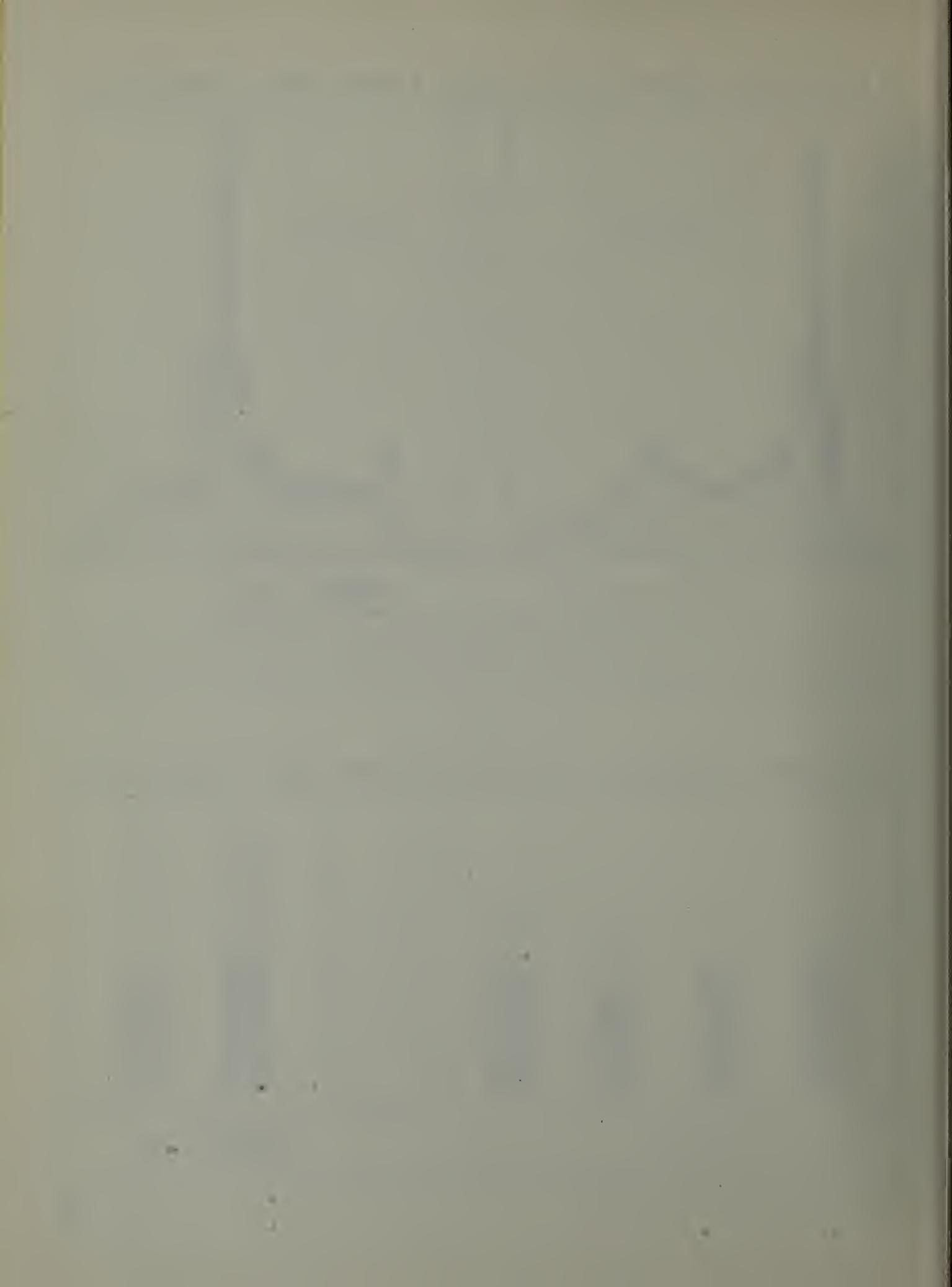


Source: Calif. State Public Utilities Comm., Feb. 20, 1952: "Means of Transportation Used by Passengers Coming into San Francisco"

PERSONS COMING TO DOWNTOWN SAN FRANCISCO



Source: Various Reports and Surveys (See Table 6)



In the larger Metropolitan Traffic District, transit patronage accounted for a little less than half of the total trip destinations (49.4 per cent) as opposed to the Central Business District's 60.8 per cent, reflecting higher auto usage in trips to work in industrial areas such as the South-of-Market and North Embarcadero industrial areas which are within the Metropolitan Traffic District. ("Auto Row" on Van Ness Avenue would also contribute more daily trips by private automobile).

"Trips Downtown" in 1954 -- A Shift from Transit Patronage to Use of Autos.  
(See Table 7)

In 1947, automobile registration figures and population estimates give us an estimated 4.14 persons per passenger automobile. The 189,397 automobiles registered in San Francisco in 1947 were increased by 56,164 to bring a 1954 total of 245,561 passenger automobiles, or an estimated 3.20 persons per passenger automobile.

Thus, it is not surprising that 1953 cordon counts conducted by the Traffic Engineering Division of the San Francisco Department of Public Works show that approximately 20 to 22 per cent more vehicles entered and left the Metropolitan Traffic District in 1953 than were counted in 1947 at the same gateway points.

On the Municipal Railway, passenger checks conducted in 1954 by the Schedule Division show decreases of from 19 to 27 per cent in number of persons entering and leaving the Metropolitan Traffic District by transit in 1954 as compared to 1947.

Balancing this increase in persons entering in autos against the decreases in persons entering in transit vehicles we find only a slight increase in the total number of persons entering the Metropolitan Traffic District in 1954 over 1947, from origins within San Francisco (possibly two per cent).

Thus, the addition of many thousands of automobiles to the crowded traffic of San Francisco's Downtown District, and the surrounding districts in the Metropolitan Traffic District, has resulted in only a small net gain of persons brought into the district.

Tables derived from the cordon counts of the railway and the Traffic Engineering Division indicate that this shift from transit to autos is more pronounced for off-peak period travel than for the peak periods of from 7:30 to 8:30 AM and 5 to 6 PM. The least "transit loss" is shown on the Market Street car and trolley bus lines serving the southwestern sections of the city, where only a 7.1% decrease in 1954 patronage compared with 1947 patronage is shown for the peak hour period, 5 to 6 PM. At the same time, gains in automobile use showed an increase of only 12.4 per cent for the southwestern gateways, compared with a gain of 18.8 per cent for all sectors of the city for the peak period, 5 to 6 PM. This substantiates the complaint of transit operators throughout the country that the more lucrative off-peak transit travel is being lost to private autos, and the more expensive peak period transit operations continue to draw heavy patronage.





DAILY TRIPS IN SAN FRANCISCO, 1947 DESTINATIONS BY TYPES OF DISTRICTS  
(Bay Area Metropolitan Traffic Survey Data, 7 AM -- 7PM, Typical Week-day, 1947 -- Analyzed by San Francisco Department of City Planning).

(See Plate II)						
DISTRICTS	TOTAL DAILY TRIPS		TRIPS BY AUTO		TRIPS BY TRANSIT	
	Number	Per Cent of Total Trips	Number	Per Cent of Total Auto Trips	Number	Per Cent of Total Transit Trips as Percent of Total Trips to District
Total Daily Trips in San Francisco Excluding "Trips to Home"	788,787	100.0%	466,689	100.0%	322,098	100.0%
I. Trips to Residential Districts	311,119	39.4%	241,621	51.8%	69,498	21.6%
II. Trips To Working Districts	477,668	60.6%	225,068	48.2%	252,600	78.4%
1. Metropolitan Traffic District	426,758	54.1%	191,627	41.0%	235,131	73.0%
Financial District	98,343	12.5%	34,347	7.4%	64,006	19.9%
Shopping & Entertainment	134,237	17.0%	49,061	10.5%	85,176	26.4%
Uptown Shopping	73,069	9.2%	40,118	8.6%	32,951	10.2%
South of Market	86,590	11.0%	50,945	10.9%	35,645	11.1%
North Embarcadero	34,509	4.4%	17,156	3.6%	17,353	5.4%
2. Industrial Districts (Potrero, Bayview, Hunters Point, Visitation Valley)	50,910	6.5%	33,441	7.2%	17,469	5.4%



TABLE 6

(See Plate III)

DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO, 1912-1954  
(Typical Week Day, 7 AM - 7 PM)

YEAR	Source of Information	Total Persons Entering Downtown	Persons in Autos	Persons by Transit	Per Cent by Transit
<b>I. INTO THE CENTRAL BUSINESS DISTRICT:</b>					
	(Financial District; Downtown Shopping and Entertainment District)				
1912	Bion Arnold Report	299,966	52,347	247,619	82.6%
1926	First Miller McClintock Survey	332,356	99,595	232,761	70.0%
1937	Second Miller McClintock Survey	326,857	134,750	192,107	58.8%
1947	Estimate for Central Business District, based on <u>Cordon Count Data</u> for the larger Metropolitan Traffic District	382,203	149,903	232,300	60.8%
1954	Estimate based on increased auto use and decreased transit patronage, 1947-1954	400,000	204,000	196,000	49.0%
<b>II. INTO THE METROPOLITAN TRAFFIC DISTRICT:</b>					
	(Central Business District plus South-of-Market, Civic Center-Upper Market, and North Embarcadero District)				
1947	<u>Cordon Count Data, 1947</u>	535,286	270,838	265,248	49.4%
1953-54	Estimate based on increased auto use and decreased transit patronage shown in transit cordon count, 1954, and traffic cordon count, 1953	540,552	324,735	215,817	39.9%

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TABLE 7

COMPARISON OF PERSONS ENTERING AND LEAVING DOWNTOWN SAN FRANCISCO FROM WITHIN SAN FRANCISCO  
TYPICAL WEEKDAY, 1947 AND 1953-1954 (METROPOLITAN TRAFFIC DISTRICT)

PERSONS ENTERING OR LEAVING DOWNTOWN AT	AUTO PASSENGERS		TRANSIT PASSENGERS		COMPARABLE COUNTS OF TOTAL AUTO & TRANSIT PASSENGERS	
	1947 <sup>a</sup>	1953 <sup>b</sup>	1947 <sup>a</sup>	1954 <sup>c</sup>	1947	1953-1954
COMPARABLE CHECK			Estimated Per Cent Increase or Decrease	Estimated Per Cent Increase or Decrease	Estimated Per Cent Increase or Decrease	Estimated Per Cent Increase or Decrease
POINTS, 1947 & 1953-54						
ENTERING DOWNTOWN (12 hrs) 7 AM - 7 PM	206,819 <sup>d</sup>	247,992 <sup>d</sup>	+19.9%	141,132 <sup>d</sup>	401,022	389,124
From the North	45,647	63,325	+38.7%	26,770	80,049	90,095
From the West	70,581	78,923	+11.8%	42,494	130,868	121,417
From the Southwest	32,375	35,150	+ 8.6%	39,071	86,952	74,221
From the South	58,216	70,594	+21.3%	32,797	103,153	103,391
LEAVING DOWNTOWN (12 hrs) 7 AM - 7 PM	219,944	269,193	+22.4%	141,877	402,513	411,070
To the North	51,932	74,902	+44.2%	30,048	87,017	104,950
To the West	62,206	78,496	+26.2%	39,884	118,590	118,380
To the Southwest	32,706	38,012	+16.2%	35,585	77,007	73,597
To the South	73,100	77,783	+ 6.4%	36,360	119,899	114,143
LEAVING DOWNTOWN IN PEAK HOUR (5-6 PM)	38,367	45,582	+18.8%	39,061	86,768	84,643
To the North	7,258	10,575	+45.7%	5,972	15,783	16,547
To the West	12,919	14,818	+14.7%	12,186	29,188	27,004
To the Southwest	5,600	6,296	+12.4%	12,095	18,617	18,391
To the South	12,590	13,893	+10.3%	8,808	23,180	22,701

Sources: a. Cordon Count Data, Metropolitan Traffic District, San Francisco. Transportation Technical Committee, 1947

b. Tabulations made by the Department of City Planning from 1953 vehicle counts for cordon area, Metropolitan Traffic District, provided by the Division of Traffic Engineering, Department of Public Works.

c. Tabulations made by the Department of City Planning from 1954 Passenger Check of Schedule Division, Municipal Railway for cordon area, Metropolitan Traffic District

d. Totals for points at which comparable counts were made in 1953 and 1954. Does not include some suburban entry stations such as Bay Bridge ramps, or passengers disembarking at 3rd and Townsend Depot or East Bay Terminal, or some minor streets leading into the Metropolitan Traffic District.





TABLE 8

AUTOMOBILES AND POPULATION IN SAN FRANCISCO

1925 - 1954

YEAR	Automobiles Registered in San Francisco <sup>a</sup>	Population of San Francisco	Ratio, Per Persons Per Automobile
1925	94,453	<sup>b</sup> 579,660	6.14
1930	146,430	<sup>c</sup> 634,394	4.33
1935	142,746	<sup>b</sup> 650,350	4.56
1940	176,290	<sup>c</sup> 634,536	3.60
1945	161,202	<sup>d</sup> 827,400	5.13
1947	189,397	<sup>e</sup> 785,000	4.14
1950	237,574	<sup>c</sup> 775,357	3.26
1951	244,551	<sup>e</sup> 778,000	3.19
1954	245,561	785,900	3.20

Sources: a California State Department of Motor Vehicles

b Estimate, California Taxpayers Association

c U. S. Decennial Census

d Special Census of San Francisco, 1945, U. S. Bureau of the Census  
(Total includes 59,753 military personnel)

e California State Department of Finance, Estimate

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1870

1871

1871

1872

1872

1873

1873

V. DAILY TRIP ORIGINS IN SAN FRANCISCO  
WHERE PEOPLE GO FROM ITS RESIDENTIAL COMMUNITY AREAS  
 ::

In the Bay Area Metropolitan Traffic Survey, two of its tables (12 and 13) show a tabulation of daily trips from each of the city's twelve residential community areas to each of six "working areas" such as the Financial District, the shopping districts (uptown and downtown -- here tabulated together), the South-of-Market Industrial District, the North Embarcadero Industrial District, and industrial districts outside of the Metropolitan Traffic District, such as the Islais Creek, Hunters Point, Bayview and Visitacion Valley Areas. These data were computed on a 24-hour basis (as opposed to the 12-hour data discussed above) and are analyzed in chart 4 and Tables 9 and 10. They show the destination pattern within the working area of trips from each of San Francisco's residential communities.

About half of the trips from each of the residential areas to working areas were bound for the Downtown and Uptown (Civic Center-Upper Market) Shopping Districts. This pattern held true for all residential districts except the Mission, Potrero, Bayshore and Outer Mission Districts. These four districts also showed considerably lower than average percentages bound for the Financial District (6.6 per cent to 9.3%) while other districts showed proportions equal to or surpassing the all-city average of 13.9 per cent bound for the Financial District (ranging from 13.9 to 18.6 per cent).

Influence of geographical proximity is indicated in the high proportions of residents of the Mission, Potrero, Bayshore and Outer Mission districts going to the Potrero and Bayshore industrial districts as well as to the South-of-Market Industrial District. Smaller volumes of trips were found to be going to these southeastern industrial districts from the Outer Richmond, Richmond, Marina, Downtown Residential, Western Addition and Buena Vista Districts.

Heaviest volumes of total trips to the Financial District came from the Downtown Residential District (Nob Hill, Russian Hill, North Beach and Telegraph Hill neighborhoods), from the Mission and Potrero Districts, from the Western Addition, and from the Sunset District.

Public transit in 1947 (when these data were collected), brought more people to the Downtown and Uptown Shopping Districts from all San Francisco residential districts than were carried in private automobiles, except in the case of the Bayshore District.

From all residential districts, transit carried 54.3 per cent of the total bound for the shopping district. Highest proportions were found in trips from the Buena Vista District (59.7 per cent) and from the Mission and Potrero Districts (58.0 per cent), with the Bayshore District having the lowest proportion (45.2 per cent).

# THE HISTORY OF THE CITY OF BOSTON

The city of Boston, situated on a neck of land between the harbor and the bay, has been the seat of government since the first settlement. It was founded in 1630 by a group of Puritan settlers who sought a place where they could practice their religion in freedom. The city grew rapidly, and by 1690 it was the largest city in the colonies. It was the site of the Boston Tea Party in 1773, and the Battle of Boston in 1775. The city was the center of the American Revolution, and it was here that the Declaration of Independence was signed.

The city of Boston has a rich history, and it has played a major role in the development of the United States. It was the first city to be founded by a group of settlers who sought a place where they could practice their religion in freedom. The city grew rapidly, and by 1690 it was the largest city in the colonies. It was the site of the Boston Tea Party in 1773, and the Battle of Boston in 1775. The city was the center of the American Revolution, and it was here that the Declaration of Independence was signed.

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Residential districts bordering the industrial districts provided the largest numbers of trips into them. Significant movements were:

(1) Into South-of-Market Industrial District from Mission, Potrero, Bayshore, Outer Mission and Western Addition Residential Districts;

(2) Into North Embarcadero Industrial District from the Downtown Residential, Western Addition and Marina Residential Districts;

(3) Into the outer industrial districts (Potrero and Bayshore) from Mission, Potrero, Bayshore and Outer Mission Residential Districts.

Some of these movements were predominantly by public transit and others were mainly by private automobile. Movements to the southeastern industrial areas from Outer Richmond, Richmond, Marina, Mission, Potrero, Bayshore, Outer Mission and West-of-Twin Peaks Residential Districts were predominantly by automobile, while from Western Addition, Buena Vista and the Downtown Residential Districts transit accounted for at least half of the movement to the southeastern industrial districts, if not more.

Proximity may also account for larger percentages of trips to the North Embarcadero Industrial District from the Marina, from the Downtown Residential, and from the Western Addition Districts than to this district from the Mission, Potrero, Bayshore and Outer Mission Districts.

Most significant inter-district movements of large masses of persons were to the South-of-Market Industrial District from the Mission and Potrero Districts (39,243 persons in one direction per day), and to the Shopping Districts (Uptown and Downtown) from:

Mission and Potrero District (57,937 persons in one direction per day);

Downtown Residential District (56,992 persons);

Western Addition (36,906 persons);

Buena Vista District (29,719 persons);

Marina District (26,906 persons);

Sunset District (26,576 persons).

In all of these large-volume inter-district movements of persons listed above, the majority, in 1947, were carried by public transit.

In the inter-district trips across the "Living Area-Working Area Boundary", highest ratio of transit usage was found in trips from the residential areas to the Financial District (65.8 per cent). Highest of these ratios were found in trips to the Financial District from closer-in higher-density medium-to-low rent areas as Buena Vista (74.5 per cent by transit), Western Addition (72.1 per cent), and the Mission and Potrero Districts (71.5 per cent). Only from the Outer Mission District was transit patronage (48.6 per cent) less than half the district's trips to the Financial District. From all other residential districts trips to the Financial District were still preponderantly by transit.



This would indicate that higher transit usage originates in densely-populated inner apartment districts and that higher auto usage comes from outer single-family homes districts. (See Tables 9 & 10). This holds true to a large extent regardless of income levels and rent levels (except that from the Marina, a high-rent apartment and flat district, higher auto usage was noted). Greater ease of auto ownership could be assumed to be the case in our individual homes areas where almost every house has a built-in garage, while in densely built-up apartment areas, off-street storage of autos is often difficult or expensive.

It is significant that in trips to the Financial District and to the Downtown and Uptown Shopping Districts, higher transit proportions held true from all districts of the city (except the Outer Mission) regardless of proportion of single-family homes to total dwelling units.

In comparing total daily riders from each of the city's districts with its resident population, we find higher per capita "riding habit" in high-density apartment and flat areas. (See Table 10). These are also the areas of greatest concentrations of single-person-households (one person or two or three unrelated adults in an apartment or room), where there would be fewer dependents left home all day to do the housework, as is more apt to be the case in single-family home areas, such as Bayshore, Outer Mission, West-of-Twin Peaks, or Sunset Districts. In the case of the Downtown Residential District, the 90,000 trips originating out of a resident population of 66,000 is explained by: (a) trips by non-resident transients, hotel-dwellers, etc., and (b) "return trips" of persons entering areas such as Fisherman's Wharf and the North Beach restaurant district who are not residents of the area. Return trips of out-of-district shoppers might also account for some trips originating in the Mission District which has specialized shopping facilities (such as furniture and appliance stores) of city-wide significance.

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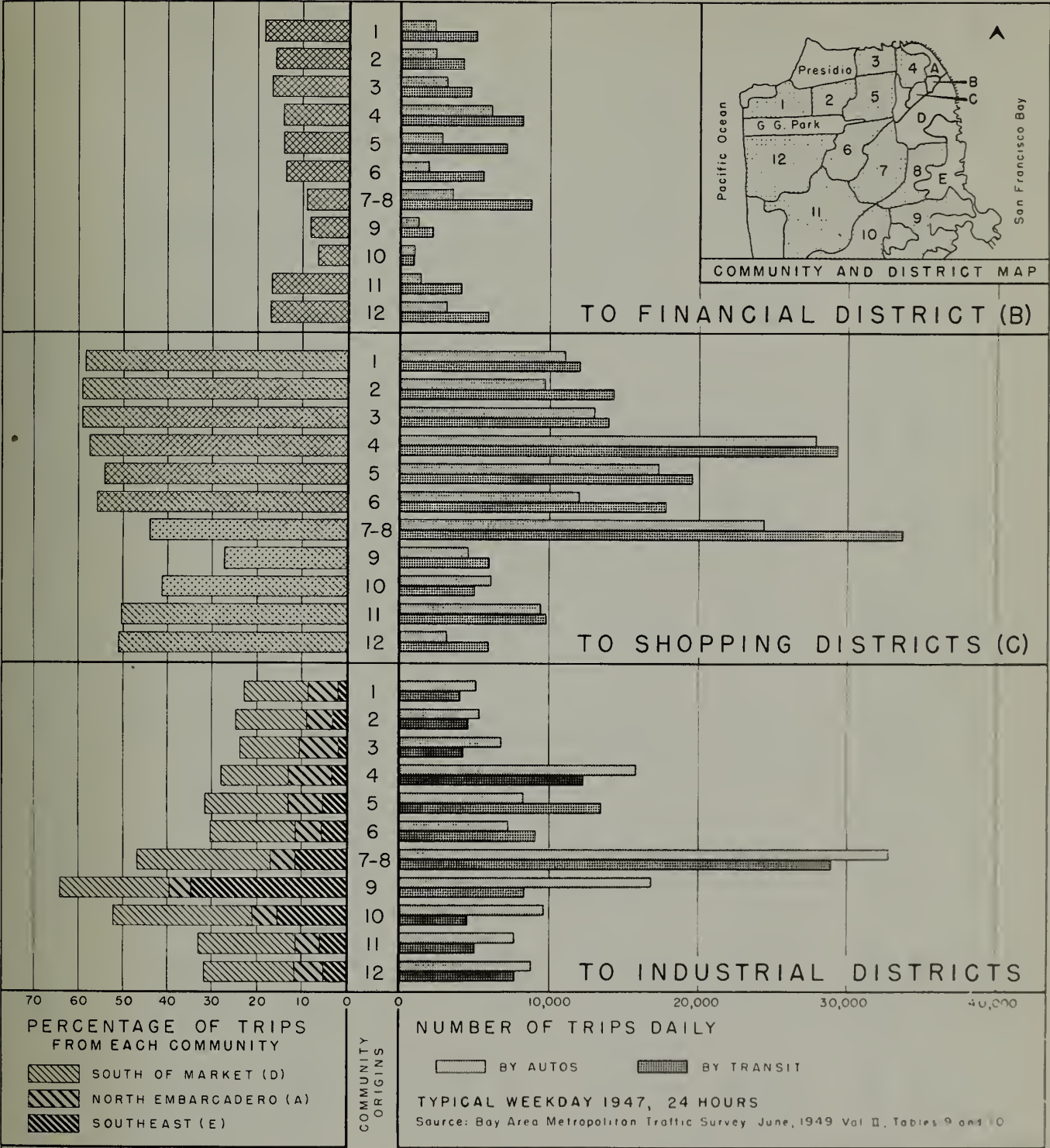
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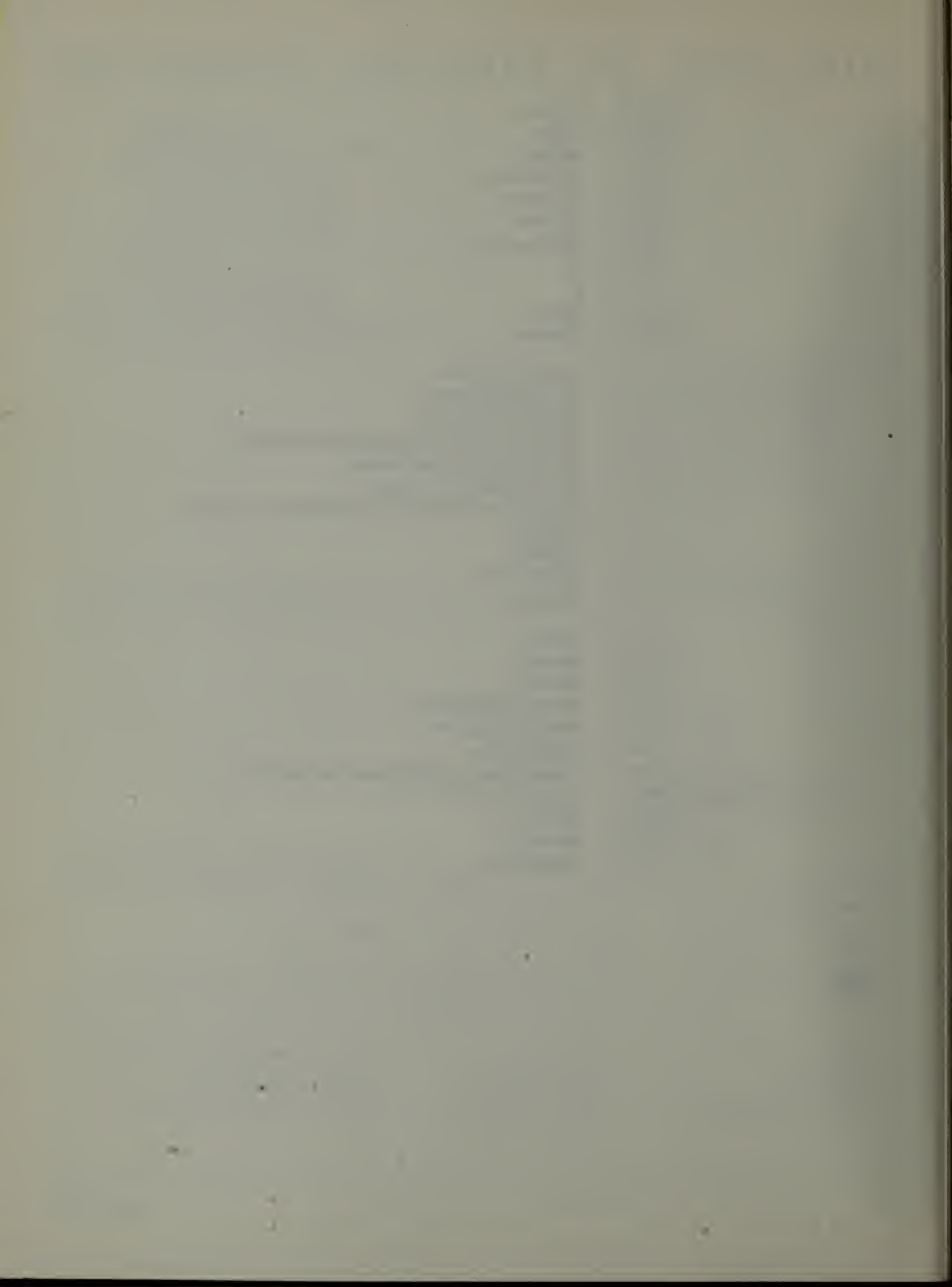
# TRIPS FROM SAN FRANCISCO COMMUNITIES



## KEY TO COMMUNITIES AND DISTRICTS

- |                         |                        |                                |
|-------------------------|------------------------|--------------------------------|
| 1. OUTER RICHMOND       | 7. MISSION             | A NORTH EMBARCADERO INDUSTRIAL |
| 2. RICHMOND             | 8. POTRERO-BERNAL      | B FINANCIAL DISTRICT           |
| 3. MARINA               | 9. BAYSHORE            | C SHOPPING DISTRICTS           |
| 4. DOWNTOWN RESIDENTIAL | 10. OUTER MISSION      | D SOUTH OF MARKET INDUSTRIAL   |
| 5. WESTERN ADDITION     | 11. WEST OF TWIN PEAKS | E. SOUTHEAST INDUSTRIAL        |
| 6. BUENA VISTA          | 12. SUNSET             |                                |





DAILY TRIPS FROM SAN FRANCISCO'S RESIDENTIAL DISTRICTS  
TO DOWNTOWN AND INDUSTRIAL DISTRICTS  
(Typical Week Day, 1947, 24 Hours)

See Chart 3.

Source: B.A.M.T.S. Tables 13 &amp; 14

DISTRICT OF DESTINATION	Total From Resi- dential Districts	Origin of Daily Trips by Residential Districts											
		1 From Outer Richmond	2 From Richmond	3 From Marina	4 From Down- Town Resi- dential	5 From Western Addition	6 From Buena Vista	7 & 8 From Mission & Potrero	9 From Bayshore	10 From Outer Mission	11 From West of Twin Peaks	12 From Sunset	13 From Daly City
Total	640,945	39,306	40,462	45,543	99,130	68,247	53,305	131,629	39,050	26,693	38,076	51,945	7,559
Per Cent via Transit	54.0%	53.6%	56.7%	50.0%	50.0%	58.5%	60.5%	54.1%	41.9%	38.4%	49.3%	53.9%	42.3%
FINANCIAL DIST.	86,322	7,297	6,519	7,761	14,233	9,843	7,412	12,270	3,283	1,772	6,434	8,966	532
Per Cent via Transit	65.8%	69.1%	64.5%	60.4%	57.4%	72.1%	74.5%	71.5%	64.9%	48.6%	63.6%	65.6%	60.3%
SHOPPING DIST.	325,923	22,985	23,935	26,906	56,992	36,906	29,719	57,937	10,722	10,981	19,084	26,576	3,180
(Uptown & Down- town)													
Per Cent via Transit	54.3%	52.3%	59.5%	51.8%	51.2%	52.9%	59.7%	58.0%	55.2%	45.2%	50.9%	54.5%	49.7%
SOUTH OF MARKET INDUSTRIAL DIST.	134,081	5,568	6,509	6,110	15,055	12,637	10,137	39,243	9,699	8,118	8,269	10,371	2,365
Per Cent via Transit	48.0%	40.9%	45.7%	40.7%	49.7%	61.3%	56.2%	50.6%	39.4%	29.3%	40.8%	49.9%	46.1%
NORTH EMBARCA- DERO INDUSTRIAL DIST.	43,088	2,610	2,217	3,923	9,557	5,144	3,059	7,216	1,862	1,675	2,071	3,310	444
Per Cent via Transit	47.6%	52.1%	48.3%	37.8%	32.0%	61.5%	59.1%	54.3%	40.7%	49.0%	53.5%	55.6%	29.7%
SOUTH EASTERN INDUSTRIAL DIST.	51,531	846	1,282	843	3,293	3,717	2,978	14,963	13,484	4,147	2,218	2,722	1,038
Per Cent via Transit	34.4%	40.2%	35.9%	26.1%	51.0%	64.4%	49.6%	33.5%	27.6%	29.4%	22.8%	22.8%	7.1%

100	10	10	10	10
101	11	11	11	11
102	12	12	12	12
103	13	13	13	13
104	14	14	14	14
105	15	15	15	15
106	16	16	16	16
107	17	17	17	17
108	18	18	18	18
109	19	19	19	19
110	20	20	20	20
111	21	21	21	21
112	22	22	22	22
113	23	23	23	23
114	24	24	24	24
115	25	25	25	25
116	26	26	26	26
117	27	27	27	27
118	28	28	28	28
119	29	29	29	29
120	30	30	30	30
121	31	31	31	31
122	32	32	32	32
123	33	33	33	33
124	34	34	34	34
125	35	35	35	35
126	36	36	36	36
127	37	37	37	37
128	38	38	38	38
129	39	39	39	39
130	40	40	40	40
131	41	41	41	41
132	42	42	42	42
133	43	43	43	43
134	44	44	44	44
135	45	45	45	45
136	46	46	46	46
137	47	47	47	47
138	48	48	48	48
139	49	49	49	49
140	50	50	50	50
141	51	51	51	51
142	52	52	52	52
143	53	53	53	53
144	54	54	54	54
145	55	55	55	55
146	56	56	56	56
147	57	57	57	57
148	58	58	58	58
149	59	59	59	59
150	60	60	60	60
151	61	61	61	61
152	62	62	62	62
153	63	63	63	63
154	64	64	64	64
155	65	65	65	65
156	66	66	66	66
157	67	67	67	67
158	68	68	68	68
159	69	69	69	69
160	70	70	70	70
161	71	71	71	71
162	72	72	72	72
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166	76	76	76	76
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180	90	90	90	90
181	91	91	91	91
182	92	92	92	92
183	93	93	93	93
184	94	94	94	94
185	95	95	95	95
186	96	96	96	96
187	97	97	97	97
188	98	98	98	98
189	99	99	99	99
190	100	100	100	100

100 100 100 100 100

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TABLE 10

COMPARISON OF DAILY TRIPS FROM SAN FRANCISCO'S RESIDENTIAL DISTRICTS TO DOWNTOWN AND INDUSTRIAL DISTRICTS WITH POPULATION DATA OF RESIDENTIAL DISTRICTS

Residential District	Daily Trips From Residential Districts to Downtown and Industrial Areas 1947	Estimated Population of District 1950	Ratio: Daily Trips to Working Areas to Population of District	Per Cent Single Family Homes of Total Dwelling Units <sup>b</sup>	Per Cent Unrelated Individuals of Total Population 1950 <sup>b</sup>
	Number Per Cent of Total				
Total Trips Originating in Residential Districts	<u>640,945</u>	<u>665,000<sup>a</sup></u>	<u>0.96</u>	<u>36.4%</u>	<u>19.1%</u>
1. Outer Richmond	39,306	42,000	0.94	48.7%	52.80
2. Richmond	40,462	34,000	1.19	29.6%	46.03
3. Marina	45,543	33,000	1.38	18.1%	57.44
4. Downtown Residential	99,130	66,000	1.50	5.8%	39.41
5. Western Addition	68,247	91,000	0.75	12.4%	39.11
6. Buena Vista	53,305	44,000	1.21	19.0%	38.56
7. Mission )					
8. Potrero-Bernal )	131,629	(76,000)	1.04	(29.5%)	36.11
9. Bayshore	39,050	51,000	0.76	(45.1%)	33.42
10. Outer Mission	26,693	40,000	0.67	70.5%	36.99
11. West of Twin Peaks	38,076	55,000	0.69	80.3%	39.28
12. Sunset	51,945*	83,000	0.63	87.5%	70.60
13. (Daly City & Colma)	7,559*	-	-	77.1%	57.33
				-	-
					\$40.27

\* Included in B.A.M.T.S. survey data for "Internal Area" of the San Francisco Traffic District.

<sup>a</sup>Balance of 1950 Census population of 775,357 lived in downtown and working areas, military reservations, etc.

<sup>b</sup>See: The Population of San Francisco, 1900-1950 - A Half Century of Change. San Francisco Dept. of City Planning Mar. '54.

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# VI. THE "JOURNEY TO WORK" IN SAN FRANCISCO, AND LOCATION OF EMPLOYMENT ::

A total of 430,718 trips with work destinations in San Francisco took place on a typical week day in 1947, during a 24 hour period, (including trips recorded in the Bay Area Metropolitan Traffic Survey, as well as those shown in the Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers in San Francisco).

Included in this work-trip destination data are not only "journeys to work" but also trips taken during the course of the day's work by salesmen, doctors, plant executives, architects, contractors, utility repair crews and others, called "work-to-work" trips on B.A.M.T.S. charts.

To get an estimate of the volume of 1947 "journeys to work" or daily trips to place of employment, these "work-to-work" trips were subtracted, leaving an estimated 324,798 daily journeys to work to points in San Francisco.

This falls considerably short of the estimated 420,000 1947 San Francisco employment established unofficially by staff members of the State Department of Employment. An origin-destination survey of persons travelling in vehicles, however, would not include three important groups of employed persons: (a) absentees, (b) those walking to work, and (c) those listed as having jobs in San Francisco, but actually working outside the city (salesmen, contractors' construction crews, and others).

An unpublished study of the San Francisco Department of City Planning<sup>5</sup> completed in 1947 showed that there are at least 81,240 persons employed who might be missed in an origin-destination survey of vehicle passengers:

(a) <u>Absentees</u> (including those sick or out of town on business)	16,000
(b) <u>Persons with regular week days off</u> (who work Saturdays or Sundays)	11,200
(c) <u>Persons on vacation</u>	9,300
(d) <u>Persons walking to work</u>	34,740
(e) <u>Persons actually working outside the city,</u> though listed as having jobs in San Francisco	10,000
Total absent, walking, or working elsewhere	<u>81,240</u>

Adding the 81,240 "persons missed" in vehicular O - D survey data, we get a total of 406,038 estimated persons working, not too far off from the 420,000 estimated total employment for the city in 1947.

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<sup>5</sup> "Commuting Workers in San Francisco", July, 1947. Unpublished study of the Department of City Planning, San Francisco.

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DEPARTMENT OF CHEMISTRY

RESEARCH REPORT

NO. 1

1950

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Location of employment within San Francisco is always difficult to estimate without an actual census or sample survey. Jobs are listed with state employment personnel on the basis of the address of the corporation's head office downtown, or its main plant address. For instance, the Southern Pacific Railway might list 15,000 employees at their 65 Market Street address, but only about 5,000 of these employees might actually work in the offices there. The balance would be employed at ticket offices, passenger depots, freight yards, or round houses at other locations and even on maintenance crews working out of the city.

Work-trip destination data, (which can be used as a general guide to employment location), would indicate that 63.4 per cent of the city's employment can be found within the Metropolitan Traffic District, 7 per cent in the city's outlying industrial districts, and 29.6 per cent in its outlying residential community areas (Mission, Richmond, Western Addition, etc.). The Financial District accounts for 19.2 per cent, the Downtown Shopping and Entertainment District 13.7 per cent, the Civic Center area and Van Ness "Auto Row" 8.3 per cent. In the Central Business District, (combining the Financial and Downtown Shopping and Entertainment Districts), we get an estimate of 32.9 per cent of the city's employment. This is more than the 29 per cent of the city's employment found in the city's industrial areas, including those within the Metropolitan Traffic District.

Employment in San Francisco in 1954 has been estimated by the California State Department of Employment staff (unofficially) to be about 450,000, or in the neighborhood of a seven per cent increase from 1947.

On the basis of these assumptions, it is estimated that in 1954 the Metropolitan Traffic District provided employment for 285,300 persons, with 31,500 working in southeastern industrial districts and 133,200 in the city's residential community areas. In the Central Business District would be 148,060 persons employed, of which 86,410 would be in the Financial District. Only 37,350 would work in the Civic Center-Uptown Shopping-Van Ness ("Auto Row") area. South-of-Market and North Embarcadero would show 99,900 industrial workers within the Metropolitan Traffic District. Adding the 31,500 estimated employment of the outlying industrial areas we would get a total estimate for San Francisco's industrial areas of 131,400 persons employed. (See Table 12).

#### Public Transit in the Journey to Work

Over three-fourths of daily journeys to work undertaken by public transit to destinations in San Francisco (76.1 per cent) ended at points in the Metropolitan Traffic District. In fact almost half of the city's transit journeys to work (47.7 per cent) were to points in the Central Business District itself, within the M. T. D. Persons using private automobiles, as drivers or passengers, in their daily trips to work showed considerably smaller proportions bound for the Metropolitan Traffic District (51.7 per cent) and the Central Business District (19.2 per cent).

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The Financial District showed the highest percentage of daily work trips by public transit (70.8 per cent) and the Downtown Shopping and Entertainment District also showed a high proportion of transit riders (67.8 per cent). Lowest transit-rider proportions in journeys to work were found in trips to residential community areas (31 per cent), the outer industrial areas (32.7 per cent) and the South-of-Market industrial area (44.2 per cent).

These proportions would appear logical, because:

(a) Transit provides its most direct, frequent, and fastest services to the Central Business District. Downtown traffic congestion often makes auto travel about as slow as transit travel.

(b) On-street parking space for automobiles is scarce and restricted in the Central Business District and off-street parking space is expensive.

(c) Transit service from typical home locations to the outer industrial areas, and "across town" from one residential area to another is often indirect, infrequent, slow, and may involve one or more transfers with subsequent delays and waiting periods. Auto rides can be more direct and faster.

(d) Many industrial plants in outer areas provide free off-street parking for employees. In employment areas in the residential districts, parking space on streets is usually not too hard to find.

The proportions shown above are for 1947 as computed from B.A.M.T.S. data. Applying peak hour increases in automobile use from 1947 to 1953 and peak hour decreases in transit patronage from 1947 to 1954, as discussed above (18 per cent peak-hour increase for autos and 19 per cent peak-hour decrease for transit), we find that there is still a heavy public transit patronage in journeys to work in the Central Business District, and that a majority still ride the Municipal Railway cars and buses:

AREA	PROPORTION OF WORK TRIPS TRAVELLED BY PUBLIC TRANSIT	
	1947 ACTUAL	1953-1954 ESTIMATED
All San Francisco	48.0%	38.8%
Metropolitan Traffic District	57.6%	46.6%
Financial District	70.8%	62.5%
Downtown Shopping and Entertainment District	67.8%	59.1%

It is interesting to note that in Great Britain, where automobile ownership is the exception rather than the rule for the average family, there is a similar pattern for high use of transit for journeys-to-work in central urban areas and greater use of personal transportation to work places in less central locations.



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In an industrial plant located near London's metropolitan core at the borders of the City of London, 94 per cent of the workers came by train, underground, tram, and bus, and the rest walked.

In a plant located on the outskirts of Birmingham, on the other hand, only 60 per cent of the workers came by train, tram or bus. Ten per cent walked and 29.2 per cent came by personal transportation: automobile (13.8 per cent), motorcycle (2.0%) or bicycle (13.4%)<sup>6</sup>

#### Journeys to Work from Outside the City (1947)

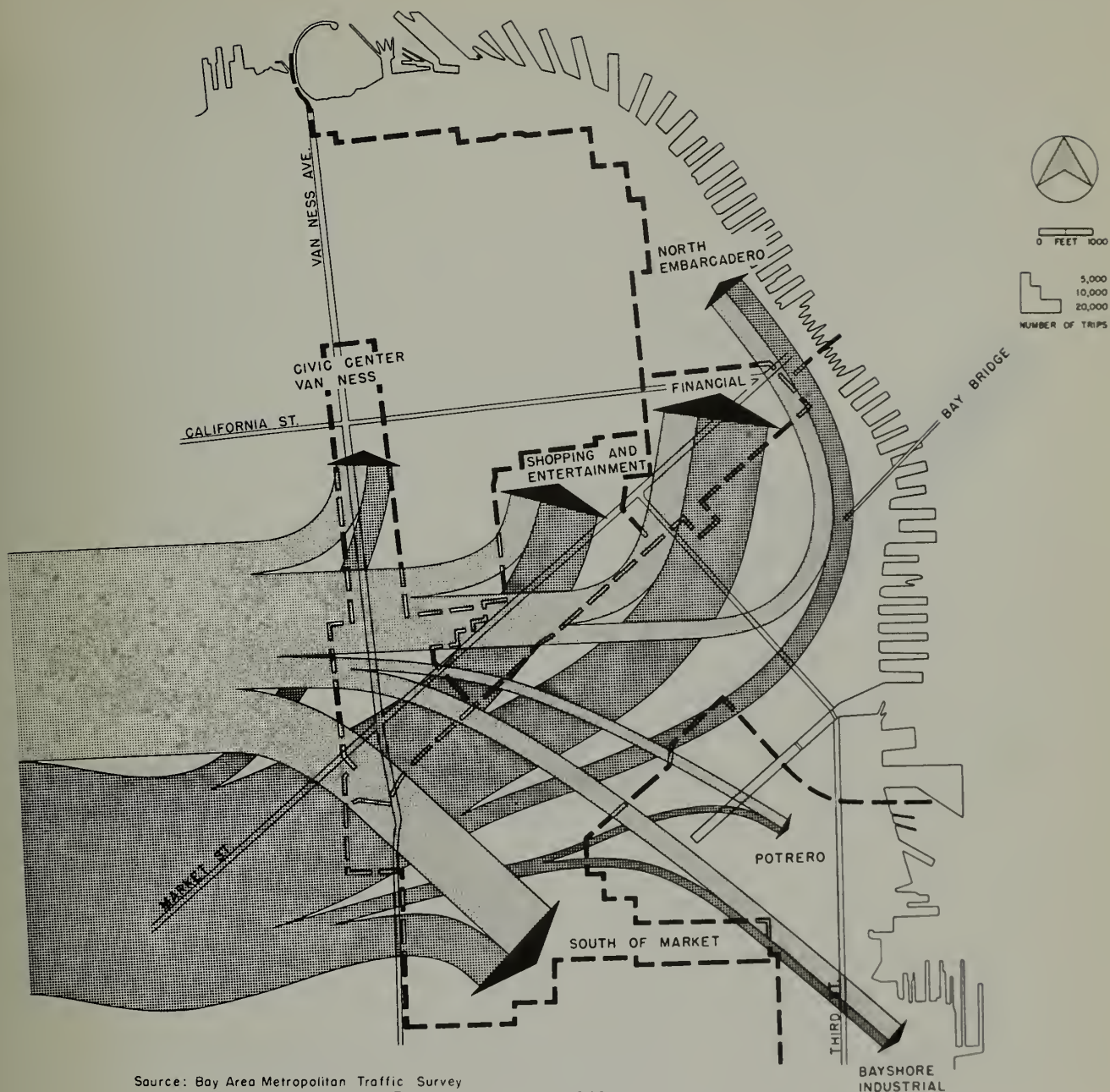
In 1947 around 70,000 persons came into San Francisco every day between 7 AM and 7 PM to work from other Bay Region communities. In 1954, it is estimated that the number coming in during a 24-hour period is close to 100,000 (see below, page 65). About 18 per cent of all San Francisco work destination trips in 1947 were from Bay Area communities outside the city. About two-thirds of these "commuters" came to points in the Metropolitan Traffic District, and almost one-third of them came into the Financial District. In the Financial District about 30 per cent of the persons working go home every night to a suburban community such as Sausalito, Berkeley, San Anselmo, Burlingame, San Leandro, Palo Alto, or to residential sections of Oakland.

Suburban living appears also to be popular amongst workers in the North Embarcadero District, which includes many import-export activities clustering around the Customs House and the Federal Appraisers' Building. The Downtown Shopping and Entertainment District showed a smaller percentage of workers from outside San Francisco (16.0 per cent), as did the South-of-Market District (14.3 per cent), and the Uptown Shopping (Civic Center-Van Ness) District (13.8 per cent). In the residential community areas, such as Sunset, Mission, Richmond, and Western Addition districts, about 14 per cent of all work trips originated in other Bay Region communities.

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<sup>6</sup> Kate K. Liepmann, Ph.D., The Journey to Work, Its Significance for Industrial and Community Life -- Kegan Paul, Trench, Trubner & Co. Ltd., London, 1944.





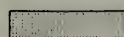
## DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

### TRIPS TO WORK

#### ORIGINS WITHIN SAN FRANCISCO

PLATE 5

TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM



AUTOMOBILE

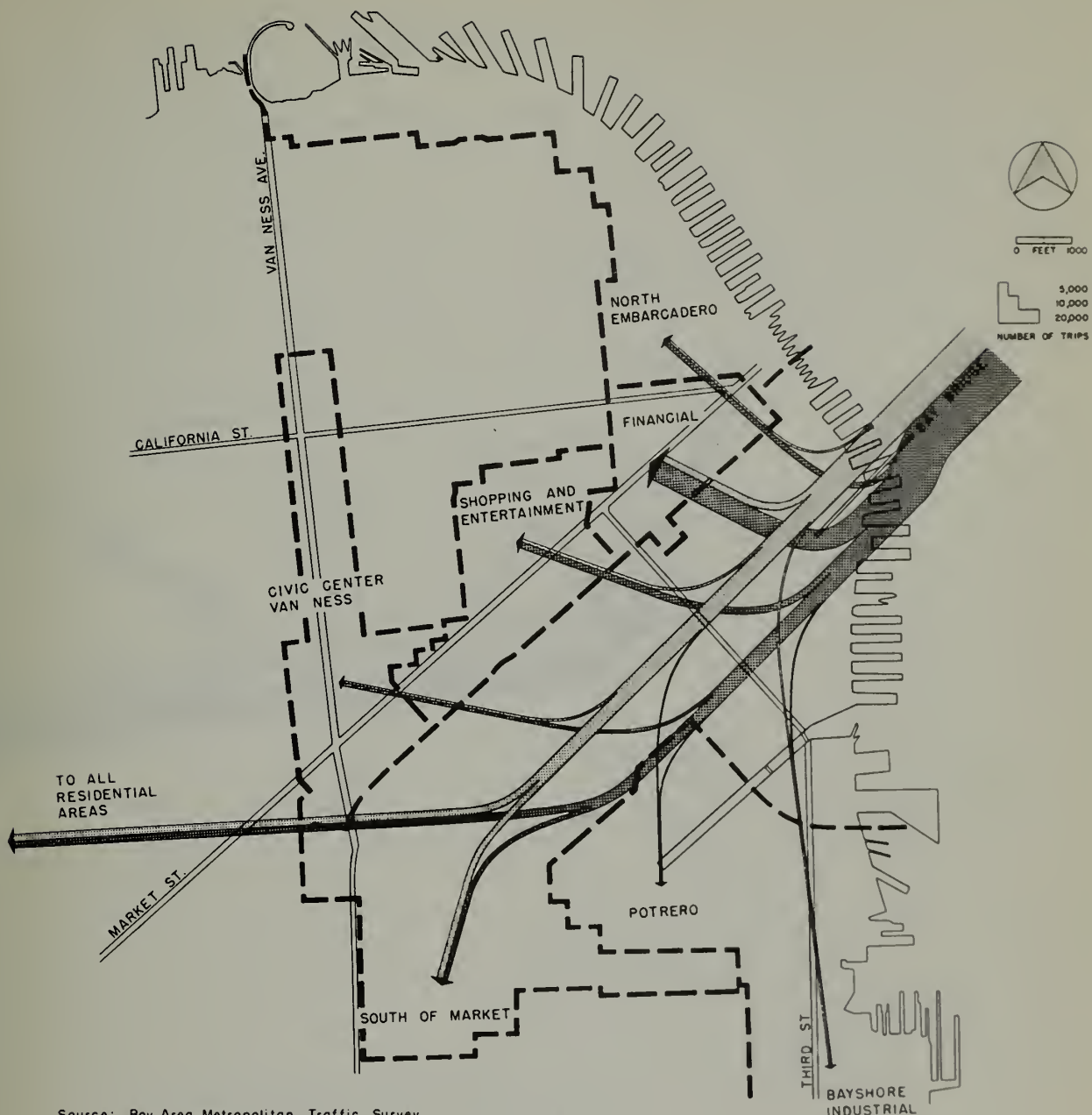


TRANSIT

SAN FRANCISCO DEPARTMENT OF CITY PLANNING









Source: Bay Area Metropolitan Traffic Survey  
Special Tabulation for S.F. Transportation Survey, 1948

## DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

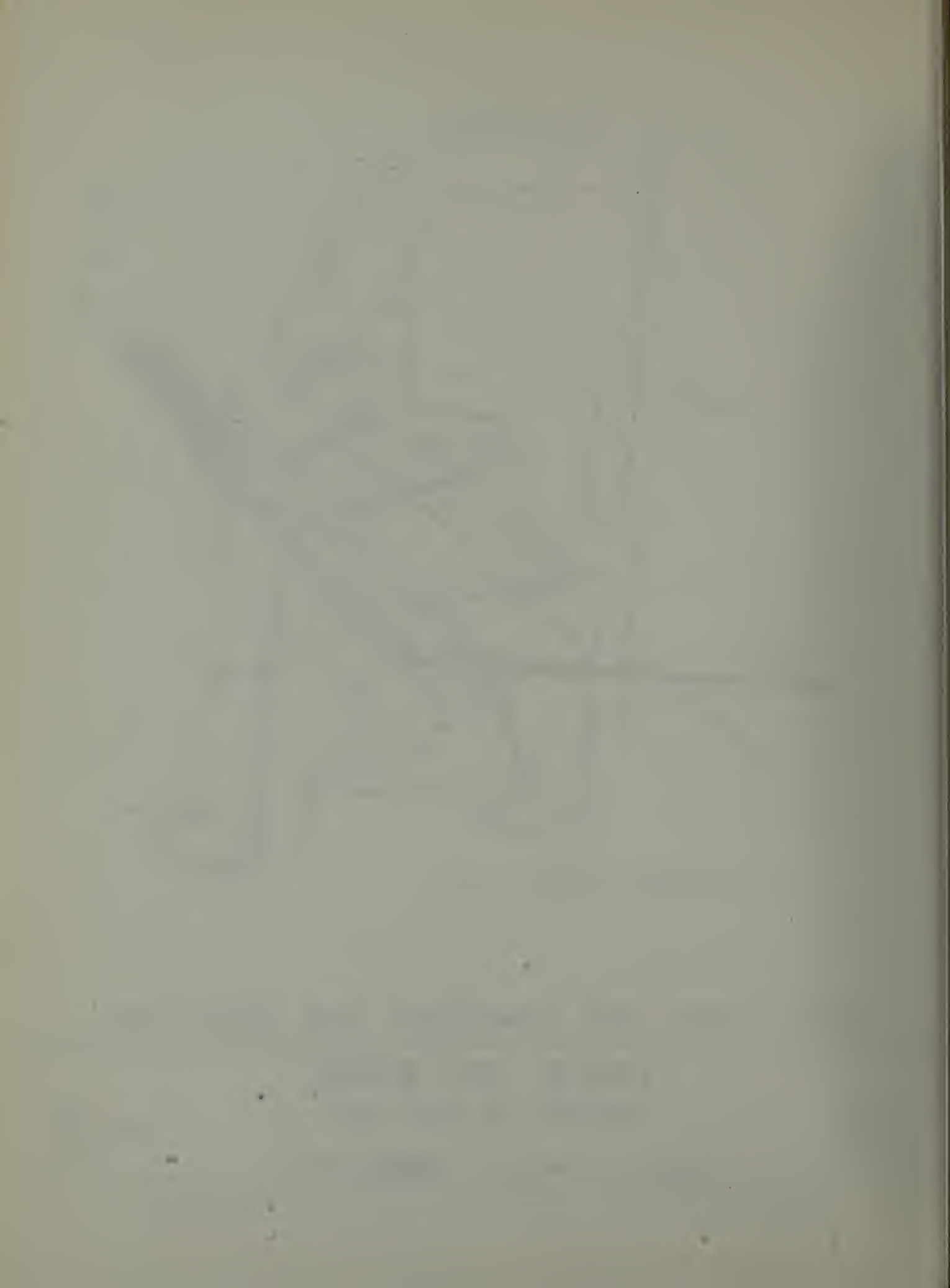
### TRIPS TO WORK ORIGINS IN EAST BAY

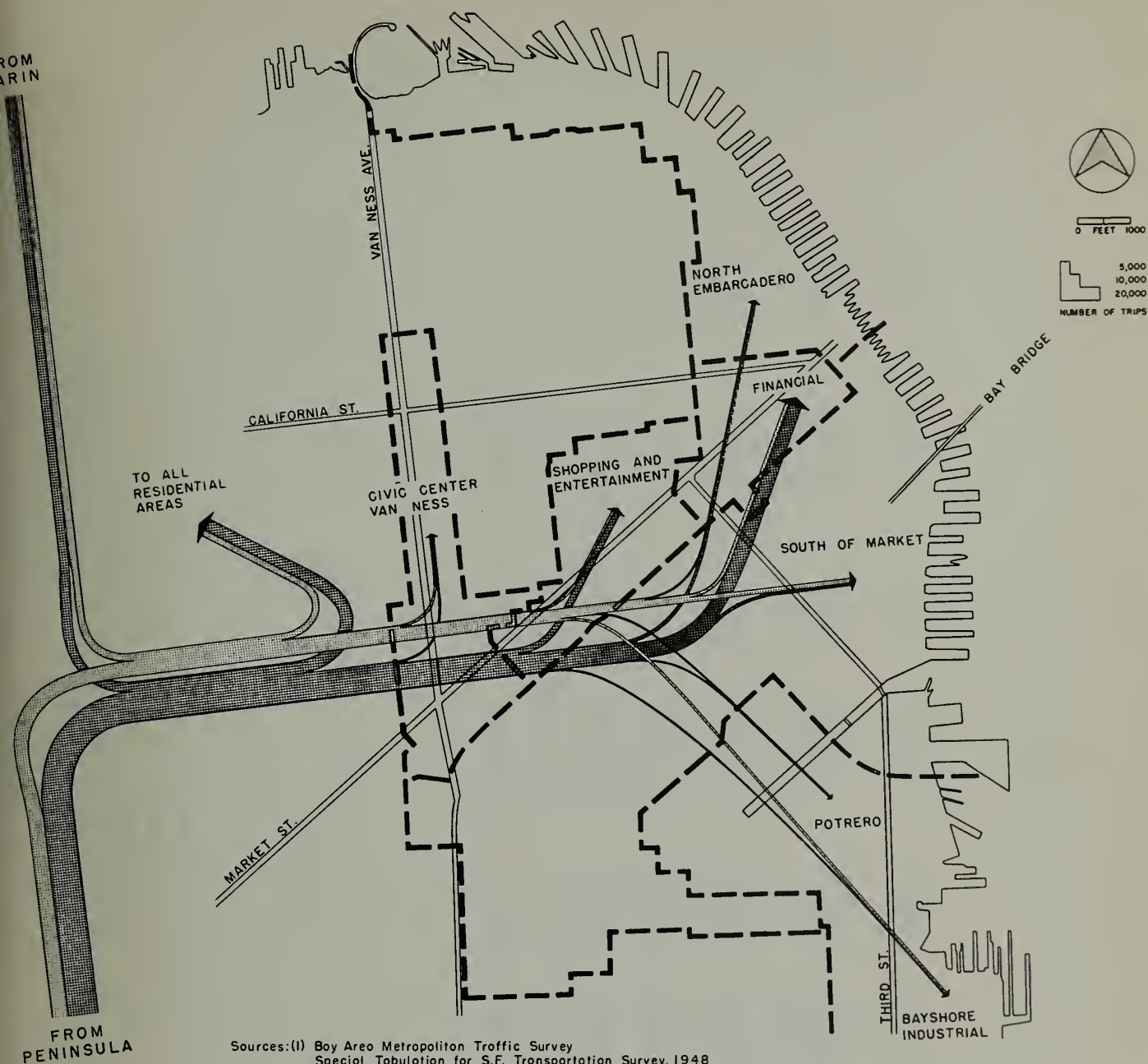
PLATE 6

TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM

 AUTOMOBILE  TRANSIT

SAN FRANCISCO DEPARTMENT OF CITY PLANNING



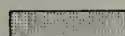


## DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

### TRIPS TO WORK

ORIGINS ON THE PENINSULA  
OR MARIN AND NORTH BAY

TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM



AUTOMOBILE



TRANSIT

PLATE 7



DAILY TRIPS IN SAN FRANCISCO -- TRIPS TO WORK (12 HOUR PERIOD)  
 From Origins In San Francisco and Bay Area Points, 1947  
 (Bay Area Metropolitan Traffic Survey Data)  
 Typical Weekday, 1947 -- 7 AM - 7 PM  
 (as analyzed by San Francisco Department of City Planning)

District of Destination	Total Work Trips		Trips By Auto		Trips By Transit	
	Number	Per Cent of Total Work Trips	Number	Per Cent of Trips by Auto	Per Cent of Total Trips By Transit	Per. Cent of Trips by Transit of Total Trips To District
TOTAL WORK TRIPS TO DESTINATIONS IN SAN FRANCISCO (12 Hours)						
Work Trips to Residential Areas	<u>383,008</u>	<u>100.0%</u>	<u>199,260</u>	<u>100.0%</u>	<u>183,748</u>	<u>48.0%</u>
Work Trips to Working Areas	113,236	29.6%	78,081	39.2%	35,155	31.0%
1. Metropolitan Traffic District	<u>269,772</u>	<u>70.4%</u>	<u>121,179</u>	<u>60.8%</u>	<u>148,593</u>	<u>55.1%</u>
Financial District	<u>242,746</u>	<u>63.4%</u>	<u>102,995</u>	<u>51.7%</u>	<u>139,751</u>	<u>57.6%</u>
Shopping & Entertainment District	73,326	19.2%	21,398	10.7%	51,928	70.8%
Uptown Shopping District	52,482	13.7%	16,880	8.5%	35,602	67.8%
South-of-Market	31,823	8.3%	17,771	8.9%	14,052	44.2%
North Embarcadero	60,567	15.8%	36,037	18.1%	24,530	40.5%
	24,548	6.4%	10,909	5.5%	13,639	55.6%
2. Industrial Districts (Potrero, Bayshore, Hunters Point, Visitation)	<u>27,026</u>	<u>7.0%</u>	<u>18,184</u>	<u>9.1%</u>	<u>8,842</u>	<u>32.7%</u>



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TABLE 12

ESTIMATED DISTRIBUTION OF SAN FRANCISCO EMPLOYMENT

(Based on work destination data from Bay Area Metropolitan Traffic Survey and S.P. Greyhound O-D Survey)

DISTRICTS OF SAN FRANCISCO	Reported Work Trip Destina- tions, 7AM-7PM 1947	Per Cent of Total for San Francisco	Estimated 1947 Employment	Estimated 1954 Employment
TOTAL FOR SAN FRANCISCO	<u>383,008</u>	<u>100.0%</u>	<u>420,000</u>	<u>450,000</u>
Residential Areas	113,236	29.6%	124,173	133,200
<u>Working Areas:</u>	<u>269,772</u>	<u>70.4%</u>	<u>295,827</u>	<u>316,800</u>
<u>Metropolitan Traffic District</u>	<u>242,746</u>	<u>63.4%</u>	<u>266,191</u>	<u>285,300</u>
Financial District	73,326	19.2%	80,408	86,410
Shopping and Entertainment District	52,482	13.7%	57,551	61,650
Uptown Shopping District	31,823	8.3%	34,897	37,350
South-of-Market District	69,567	15.8%	66,416	71,100
North Embarcadero District	24,548	6.4%	26,919	28,800
<u>Industrial Districts</u>				
(Potrero, Bayview, Hunters Point, Visitacion, etc.)	<u>27,026</u>	<u>7.0%</u>	<u>29,636</u>	<u>31,500</u>

NOTE: Reported 1947 work destinations for typical 12-Hour Week day period were less than estimated employment because in the computations the following were not tabulated, or were "missed" in the survey:

- (1) Shift workers reporting to work after 7 PM and before 7 AM (about 57,000 in 1947);
- (2) Persons walking to work (estimated at 34,000 in 1947)
- (3) Absentees, including persons on sick leave, vacation regular mid-week day off, or on out-of-town work assignment (estimated at 46,000 in 1947)

Adding these to 383,000 we get 520,000 from which approximately 100,000 "work-to-work" trips (taken in the course of the day's work) (See Table 3) should be subtracted, leaving approximately 420,000 estimated San Francisco 1947 employment. (See above, footnote 5).

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TABLE 13

DAILY WORK TRIPS INTO SAN FRANCISCO FROM BAY AREA POINTS

Typical Week Day, 1947-7AM to 7PM

Source: Special Tabulation from Bay Area Metropolitan Traffic Survey Data - 1947  
and SP. Greyhound O-D Survey, Jan.-1948.

District of Destination	Total Work Trips	Origin in San Francisco	Origin in Bay Region Points	Per Cent From Outside
TOTAL WORK TRIPS TO DESTINATIONS IN SAN FRANCISCO (12 Hours)	<u>383,008</u>	<u>313,970</u>	<u>69,038</u>	<u>18.0%</u>
Work Trips to Residential Areas of San Francisco	113,236	97,411	15,825	14.0%
Work Trips to Working Areas	<u>269,772</u>	<u>216,559</u>	<u>53,213</u>	<u>19.7%</u>
1. <u>Metropolitan Traffic District</u>	<u>242,746</u>	<u>193,933</u>	<u>48,813</u>	<u>20.1%</u>
Financial District	73,326	51,373	21,953	29.8%
Shopping and Entertainment District	52,482	44,060	8,422	16.0%
Uptown Shopping District (Civic Center-Van Ness)	31,823	27,434	4,389	13.8%
South-of-Market Industrial District	60,567	51,909	8,658	14.3%
North Embarcadero Industrial District	24,548	19,157	5,391	22.0%
2. <u>Industrial Districts</u> (Potrero, Bayshore, Hunters Point, Visitacion)	<u>27,026</u>	<u>22,626</u>	<u>4,400</u>	<u>16.3%</u>





VII. DAILY TRIPS BY SHOPPERS AND OTHERS

:.....

Over half of all daily trips starting from home, and having destinations in San Francisco, (tallied in the Bay Area Metropolitan Traffic Survey in 1947) were for purposes other than work (51.3 per cent - See above Table 2). These non-work trips -- often referred to in traffic survey reports as "trips by shoppers and others" -- were reported for the following percentages for the various trip purpose categories:

Trips for social and recreational activities	17.9 per cent
Trips to go shopping	9.8 per cent
Trips to go to school	6.8 per cent
Trips to transact business	6.0 per cent
Trips for medical or dental attention	2.2 per cent
Trips to eat meal	1.2 per cent
Trips to serve passenger (take a person to a destination different from one's own destination)	6.0 per cent
Trips to change travel mode (trip to a point where a different mode of transportation will be taken -- i.e., bus to airport, auto to R. R. Station, street car to parking lot, etc.).	1.4 per cent

Similarly more than half of the daily trips tallied from B.A.M.T.S. data for the 12-hour period 7 AM - 7 PM, in a special tabulation for the 1948 Transportation Survey, were non-work trips (51.4 per cent, or 405,779 non-work trips out of 788,787 total daily trips not including trips to home -- see Tables 5, 11, and 14).

The central shopping and industrial districts of the city were the destination of over half of the daily trips with non-work destinations (51.2 per cent), but only a little less than half (48.8 per cent) went to residential community areas. One-fifth of all these trips (20.1 per cent) were to the Downtown Shopping and Entertainment District, and another 10.2 per cent were to the Uptown (Civic Center-Van Ness) Shopping District. A little less than half of these non-work trips (45.3 per cent) were to points within the Metropolitan Traffic District, and only 5.9 per cent were to the outer southeastern industrial districts.

Differences in typical trips by auto and by public transit are quite evident in the case of the non-work trips of "shoppers and others". Almost two-thirds (61.2 per cent) of the non-work trips undertaken by automobile were to destinations in the residential community areas, while only 17.4 per cent of the transit trips were to these districts. Over two-thirds (69.0 per cent) of all transit non-work trips were to points within the Metropolitan Traffic District, while less than one-quarter of the transit trips (24.8 per cent) were to the residential community areas.

The Downtown Shopping and Entertainment District alone accounted for more than one-third (35.8 per cent) of all non-work transit trips undertaken in the 12 hour period. Only 12.1 per cent of all automobile non-work trips were to the Downtown Shopping and Entertainment District.



A good majority of the "shoppers and others" (60.6 per cent) who came to the Downtown Shopping and Entertainment District in 1947 came by public transit. Less than half of those coming to other central districts of the city on non-work trips came by transit, on the other hand (Financial District: 48.3 per cent; Uptown Shopping District: 45.8 per cent; South of Market Industrial District: 42.7 per cent; North Embarcadero: 37.3 per cent). Only one-third of those with errands or other non-work purposes in the southeastern industrial districts came by transit (36.1 per cent). The lowest proportion of transit riders was found in trips for non-work purposes to residential community areas, where it was less than one-fifth (17.4 per cent).

#### "Shoppers and Others" from Outside the City

Suburban trips for shopping and other purposes to San Francisco's Downtown Shopping and Entertainment District constituted less than one-sixth of the total suburban trip destinations in San Francisco (14.1 per cent). Highest proportion of non-work trips originating in Bay Area points, compared with non-work trips originating inside the city, was found in the Financial District (23.4 per cent). In the North Embarcadero Industrial District the proportion of suburban non-work trips was also high (18.4 per cent). The Uptown Shopping District showed a lower-than-average proportion (9.9 per cent) and the southeastern industrial districts had a very small proportion of suburban non-work trips (5.2 per cent) as compared with non-work trips of San Francisco origin.

To San Francisco's residential community areas, non-work trips of suburban origin were close to the average for the entire city, or 13.4 per cent. In numbers, they almost equalled the suburban non-work trips to points in the Metropolitan Traffic District (about 26,000), with only a scattering of suburban trips being to points in the southeastern industrial districts.

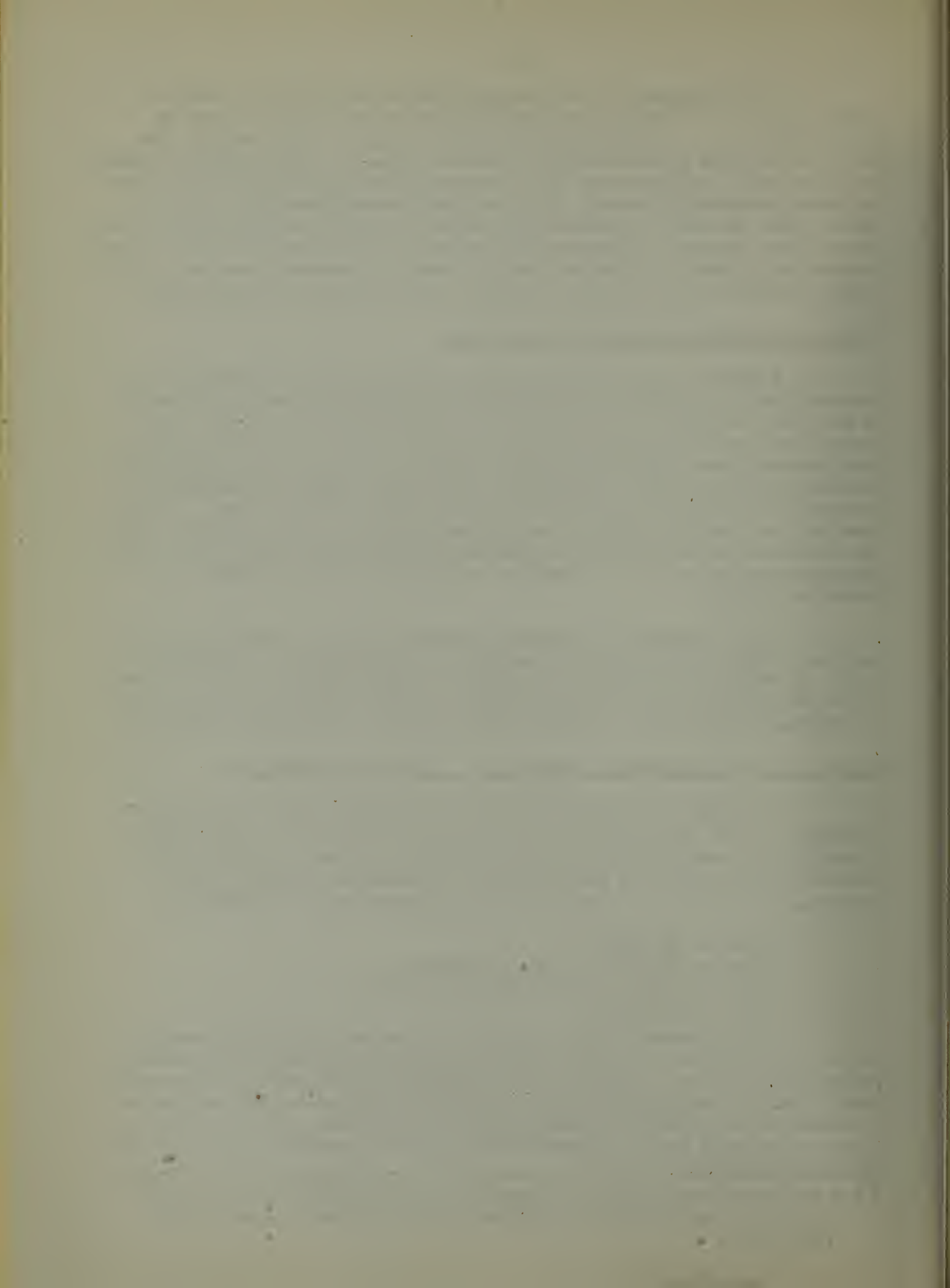
#### Downtown vs. the Residential Communities: Attraction of Shoppers

In answer to a request from the San Francisco Department of City Planning in 1950, the California State Division of Highways made a special tabulation of B.A.M.T.S. data to show work and "shopping and other" trips to district shopping areas in San Francisco's residential community areas.<sup>7</sup> This tabulation grouped together as "shopping-type" trips the following:

- Trips for Shopping
- Trips for Medical or Dental Attention
- Trips for Social or Recreational Activity
- Trips to Eat Meals.

As is discussed below on page 46 it has been found that from 35 to 40 per cent of stores' customers came to shopping districts for some other purpose than to shop. Included in "shopping-type" trips would be those that bring people to shopping districts on various errands where they are exposed to window displays and the possibility of impulse buying. The categories listed above would tend to measure these "potential shoppers'" trips, as well as shopping trips.

<sup>7</sup> Bay Area Metropolitan Traffic Survey, Tabulation #8227, March 13, 1950. California State Division of Highways, Planning Section. Sacramento, California.





Of the total of 347,727 of this category of trips tabulated on a typical 1947 week day for a 24 hour period, it is significant that, of the trips going outside the district of origin, over one-third (34.3 per cent) came to the Downtown and Uptown Shopping Districts (tabulated together in this case). To the Metropolitan Traffic District came 42.8 per cent of these inter-district shopping-type trips.

To the residential community areas in San Francisco (Richmond, Western Addition, Marina, Mission, etc.,) however, went more than half (54.8 per cent) of this class of daily travel. (Actual trips to the commercial and shopping districts of these areas were probably somewhat less, since a good proportion of the social-recreational trips included may have been trips to homes of private friends or "driving around" with no shopping district as destination. Excluding the purely "social" travel might make the split between the communities and the downtown areas closer to a 50-50 proportion.)

The Mission and Potrero Districts (combined in this tabulation) showed the highest proportion of destinations for this class of trips (10.1 per cent of the city's total), outside of the Metropolitan Traffic District. Other districts showing higher-than-average attraction for shopping-type trips were communities, which, like the Mission, have important shopping districts of city-wide attraction and importance. The Downtown Residential District (including North Beach and the Fisherman's Wharf) attracted 7.6 per cent of the city's total; the Western Addition (with the Fillmore Street District) attracted 6.0 per cent; West-of-Twin-Peaks (with West Portal and Lakeside Village business districts) attracted 6.1 per cent. (Today, West-of-Twin-Peaks would show a radically higher attraction because of the Stonestown Shopping Center, a regional shopping center with branch department stores, attractive lay-out, and plenty of parking space).

Highest proportion of shopping-type trips originating outside the district were found for the Richmond Community (75.2 per cent), Downtown Residential Community (73.7 per cent), Western Addition (74.7 per cent), and West-of-Twin Peaks (76.6 per cent). These data do not include walkers' shopping trips which would increase the ratios of intra-district shopping trips for the high-density apartment districts characterized by small corner groceries scattered generously throughout the district and within walking distance of most residents.

Thus, in 1947 it appears that the downtown areas attracted almost half of all shopping and similar-type trips that were not of a purely local or convenience-shopping nature. This was "before Stonestown" and exact figures are not available as to shopping trip increases attributable to the impact of this large and attractive suburban-type major regional shopping center. Department store executives estimate that when they establish branches in such centers, about 40 per cent of their customers who live in the immediate vicinity (five minutes' driving time) switch their patronage to the new suburban branch, but that 60 per cent continue to come to the main store downtown.<sup>8</sup>

---

<sup>8</sup> Remarks by Reginald Biggs, Emporium-Capwell Company, Bay Area Management Conference, Hotel Claremont, Berkeley, March 16, 1955.



1. The first thing I noticed when I stepped out of the car was the cold. It was a sharp contrast to the warm blanket I had been sitting under. I looked up at the sky, which was a deep, dark blue, and felt a sense of peace. The air was crisp and clean, and I could hear the distant sounds of the city. I took a deep breath and felt a sense of renewal.

2. The second thing I noticed was the smell. It was a mix of the cold air and the faint scent of the city. I could smell the exhaust from the cars, the smoke from the factories, and the fresh air from the parks. It was a complex and beautiful scent that made me feel like I was part of something big.

3. The third thing I noticed was the sound. It was a mix of the city's noise and the quiet sounds of nature. I could hear the cars honking, the trains chugging, and the people talking. But I could also hear the wind rustling through the trees, the leaves falling, and the birds singing. It was a symphony of sounds that made me feel like I was in a new world.

4. The fourth thing I noticed was the sight. It was a mix of the city's buildings and the natural beauty of the landscape. I could see the tall skyscrapers, the old brick buildings, and the green parks. But I could also see the mountains in the distance, the snow-capped peaks, and the blue sky. It was a sight that made me feel like I was in a new world.

5. The fifth thing I noticed was the feeling. It was a mix of the city's energy and the quiet solitude of the landscape. I could feel the excitement of the city, the rush of the traffic, and the buzz of the people. But I could also feel the peace of the landscape, the calm of the water, and the stillness of the air. It was a feeling that made me feel like I was in a new world.

6. The sixth thing I noticed was the time. It was a mix of the city's clock and the natural rhythm of the landscape. I could see the clock tower, the streetlights, and the cars. But I could also see the sun setting, the moon rising, and the stars appearing. It was a time that made me feel like I was in a new world.

7. The seventh thing I noticed was the place. It was a mix of the city's location and the natural beauty of the landscape. I could see the city's skyline, the mountains, and the water. But I could also see the snow, the ice, and the cold. It was a place that made me feel like I was in a new world.

Downtown Shopping Districts Versus Suburban Shopping Centers--  
Studies in Other Cities.

Considerable concern is frequently expressed at the success of large new major planned "one-stop" shopping centers placed in suburban locations. Attractive lay-out, integrated design and the provision of plenty of off-street parking space are usually important features of these new facilities. They are usually built around one or more branches of major downtown department stores.

Those interested in maintaining real estate and tax values of downtown shopping district properties in our metropolitan core cities, such as San Francisco, Boston, Philadelphia, Chicago, and others, seem particularly concerned.

In the San Francisco Bay Region, major suburban shopping centers have already been established in San Francisco at Stonestown, outside of the city at Walnut Creek, Contra Costa County, Hillsdale, San Mateo County, and are under construction in Hayward, Alameda County, and in Palo Alto and San Jose in Santa Clara County. Downtown interests fear that the abundance of off-street parking will attract so many shoppers who now come to the metropolitan downtown shopping center (hampered by its lack of off-street parking, its serious street traffic congestion and its lack of attractive appearance in many cases), that downtown trade volumes and property values will suffer.

A number of studies have been made in other cities, based on origin-destination surveys conducted by state highway authorities, city traffic engineering departments and the U.S. Bureau of Public Roads (companion studies to the Bay Area Metropolitan Traffic Survey). These tend to show that metropolitan downtown shopping centers continue to draw the bulk of shopping for major items of apparel, furniture, and more expensive "one-time" purchases, whereas the suburban shopping centers seem to attract mainly "convenience shopping" of current expendable items of clothing, hardware, notions, and the like. This seems to apply even to the suburban branches of the downtown department stores. The attraction of downtown districts has been found to be strong up to within five minutes' driving time of the suburban centers, and this downtown attraction even continues to pull significant numbers of shoppers from within the area served by suburban centers.

A summary and analysis of these studies made recently by the Urban Land Institute<sup>9</sup> showed that most suburban shopping centers of regional importance (such as Stonestown in San Francisco) generate considerable patronage within from one to four miles' distance but that their attraction beyond this limit is of lesser importance. The Northgate Shopping Center, on the northern city limits of Seattle, for instance (a model of convenience, design attractiveness, off-street parking facilities, and with one or more downtown department store branches in its group) attracts few people from beyond a three-mile radius.



Downtown areas have one advantage not possessed by most suburban shopping centers, namely a "captive market" of business men and employees who work in the average metropolitan core city's financial and downtown shopping districts (in San Francisco this is estimated to be at least 148,600 for the Financial District and the Downtown Shopping and Entertainment District). (See above, Table 13).

The Urban Land Institute survey cited a Philadelphia study which showed that one downtown department store found that 35 per cent of its shoppers came to the store directly from their place of employment in the central business district. Another 8 per cent came downtown for other reasons, and a little over half came downtown specifically on a shopping expedition (57 per cent).

A survey of fourteen downtown stores in Kansas City, Missouri, showed that about 40 per cent of shoppers on either Thursdays or Saturdays came downtown for purposes other than shopping. On Thursdays, downtown workers amounted to 21.2 per cent of the stores' shoppers and on Saturdays they amounted to 11.4 per cent.<sup>9a</sup>(See Table 19).

A recent analysis of daily trips in the Washington D. C. Metropolitan Area (including suburban areas in Maryland and Virginia), made for the Highway Research Board, showed the "pull" of Washington's Central Business District to be strong except for the zones within a few miles of the established business districts of suburbs and the new planned regional shopping centers with off-street parking, attractive design, and department store branches.<sup>10</sup> For instance, frequency of shopping trips along a corridor between Washington's Central Business District and the suburban center at Silver Spring, Maryland, showed that even within five minutes' driving time of Silver Spring, 70 per cent of the shopping trips were to Washington's Central Business District even though the latter was 19 minutes' driving time away. In areas beyond Silver Spring, the proportion going on through Silver Spring to Washington was considerably less. Similar zones of "shoppers' attraction" were found to exist for other suburban shopping districts and centers. As mentioned above, it is significant that when department stores establish new suburban branches, 60 per cent of the stores' customers in the area immediately adjacent to it continue to do a substantial portion of their trading at the downtown main store.

#### Place of Public Transit in Shoppers' Trips in Other Cities

In the Washington D. C. Metropolitan Area, it was found that (comparing Washington's Central Business District with 15 suburban business districts and shopping centers) 77 per cent of all trips to work destinations went to downtown Washington, and only 23 per cent to suburban centers. Shopping, errand, and social-recreation trips, on the other hand, were about evenly divided between Washington's Central Business District and the 15 suburban centers. (See Table 17).

---

9a Downtown Transportation Survey, Community Studies, Inc., Kansas City, Missouri, 1953.

10 Gordon B. Sharpe, "Travel to Commercial Centers of the Washington D. C. Metropolitan Area," Bulletin 79, Highway Research Board, Washington D. C., 1953.







Public transit carried 62.4 per cent of all trips to Washington's Central Business District (75 per cent of those on shopping trips), but only 16.6 per cent of those going to the suburban business districts and shopping centers. The transit-riding proportion of shoppers was higher for the older established suburban business districts, usually located at transfer points on long-established transportation lines, while the new shopping centers, specifically aimed at the "automobile trade" may or may not have been located conveniently to trunk transit lines.

The Urban Land Institute study cited above found that throughout the country high usage of automobiles was made in travel to new suburban shopping centers, but that, from these same high-automobile-ownership residential districts, high transit usage to downtown shopping districts occurred. This would indicate that the same people use different modes of transportation depending upon relative convenience in differing situations.

In San Francisco, for instance, we noted above (See Chart 3 and Tables 9 and 10) that medium and high rent-level districts with a high proportion of single-family homes (and presumably a high per-capita car ownership ratio) showed high transit riding ratios in trips to the Financial District and the Downtown Shopping Districts, but high auto riding ratios for trips to outlying industrial areas.

From the high-income, high-rent, single-family homes suburb of Shaker Heights, in the Cleveland Metropolitan Area, we find considerable shopper-patronage use made of the rapid-transit trolley line into Downtown Cleveland, despite the presumably high auto ownership ratio existing in the suburb.<sup>11</sup> This line has fast service over a private grade-separated right-of-way and an off-street terminal in the heart of the shopping district of Cleveland.

Apparently the larger the population of a metropolitan area, the larger will be the proportion of shoppers who come to its downtown shopping district by public transit, including suburban trains and buses. In Table 18, below, figures from the Urban Land Institute survey show that in the largest metropolitan centers (Philadelphia, Boston, and Washington, D. C.), at least three-fourths of downtown district shoppers come by transit. In metropolitan areas of from 500,000 to 1,000,000 population, a majority of shoppers come downtown by public transit (except Houston, Texas). As we go from metropolitan areas of larger to smaller populations, we find that smaller proportions of shoppers come to the Central Business District by public transit. We find that only 8 per cent of all shoppers in Appleton, Wisconsin use its once-per-half-hour local bus line to come to its downtown shops.

---

11

See Trains Magazine, April 1955. "Cleveland Rides the Rapid."



These data would indicate two things:

(1) Downtown merchants may be mistaken in thinking all they have to do to compete with suburban shopping centers is to provide comparable offstreet parking facilities; perhaps they should also try to get better rapid transit facilities, that will be as comfortable and convenient to use as is a private auto in the suburban trip;

(2) As metropolitan areas increase in population, the proportion of shoppers coming to downtown shopping areas of metropolitan core cities by public transit (including suburban trains and buses) seems to increase. With the rapid growth of the San Francisco Bay Region, this gives new perspective to proposals to establish urban and interurban rapid transit systems providing speedier, more convenient, and more comfortable public transportation to the metropolitan centers.

#### Transit use to Suburban Shopping Centers

Despite the high proportion of auto travel to suburban shopping centers, tailor-made for the automobile trade, experience has shown that considerable transit patronage to these outlying planned shopping developments has developed. Welton Beckett, A.I.A., the architect who designed San Francisco's Stonestown, says "It has been estimated that fifty per cent of the customers at Stonestown are bus or walk-in customers. At Hillsdale (San Mateo) it is again estimated that after a short time of operation, fifty per cent of the customers will be walk-in or will come by bus..... If a regional shopping center had to live off private automobile traffic alone, it would die off quickly." (Underlining provided.) "The ratio of private cars may be high initially, then fall slowly as more buses are provided." <sup>a</sup>

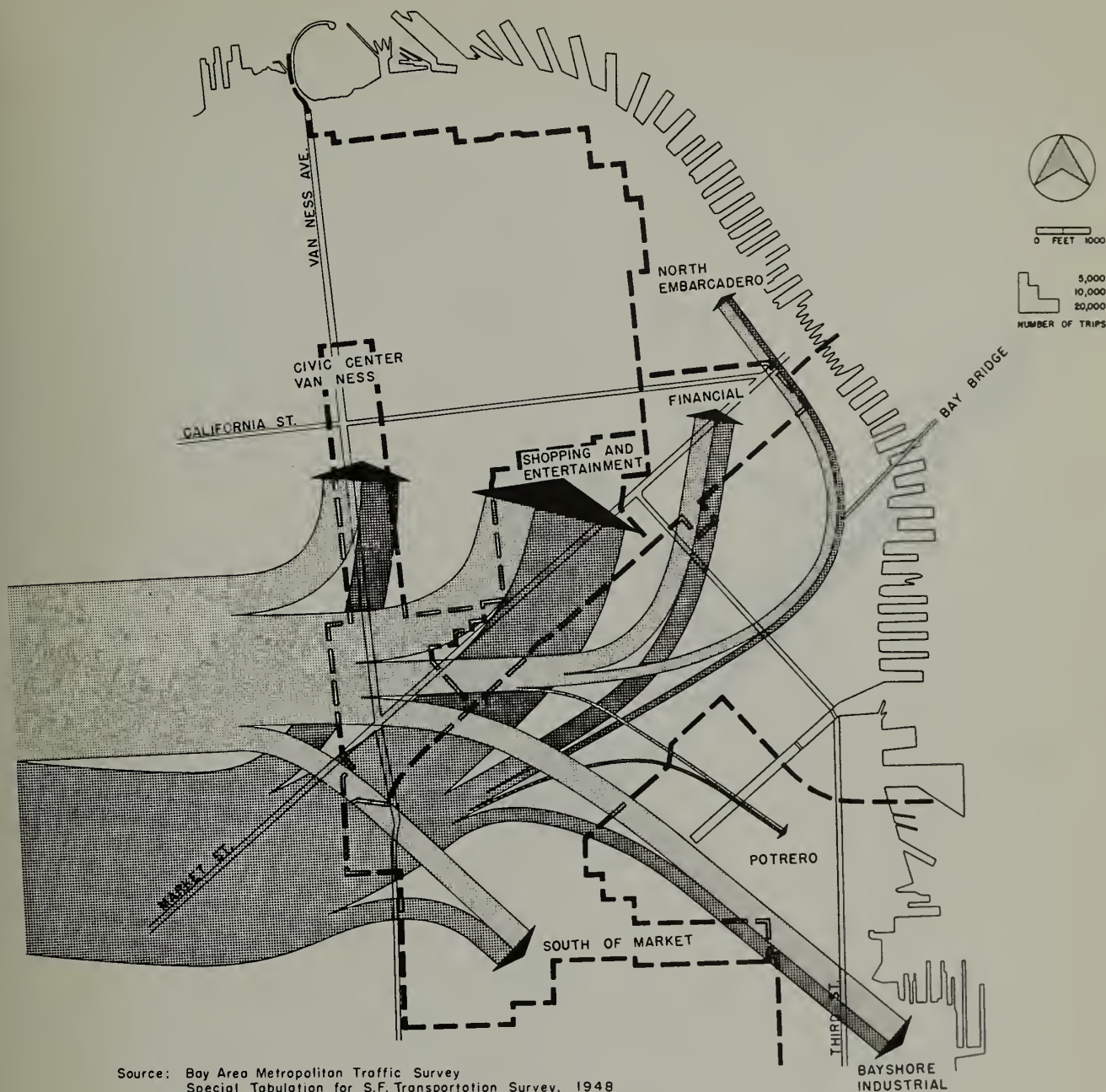
Three Bay Area suburban regional shopping centers designed by Mr. Beckett -- Stonestown in San Francisco, Hillsdale in San Mateo, and Stanford in Palo Alto (under construction) -- are, it is significant to note, located within a few hundred feet of a trunk rail transit line, suburban rail station, or interurban bus line, and usually have one or more local feeder bus routes running right through the shopping center itself.

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<sup>a</sup> Welton Beckett, A.I.A. "Shopping Center Traffic Problems" Traffic Quarterly, April 1955.





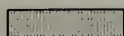


DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

# TRIPS FOR OTHER PURPOSES ORIGINS WITHIN SAN FRANCISCO

PLATE 8

TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM

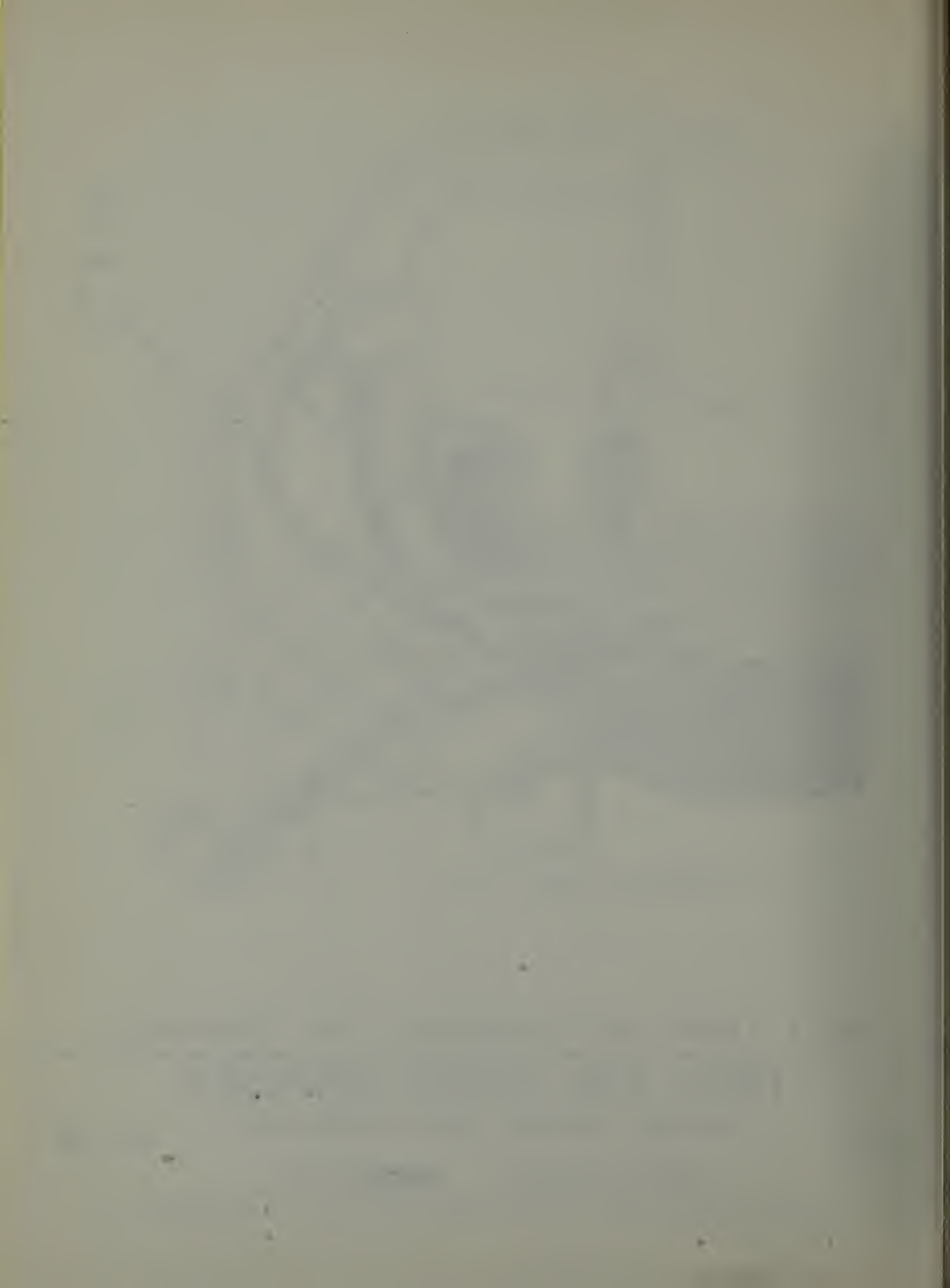


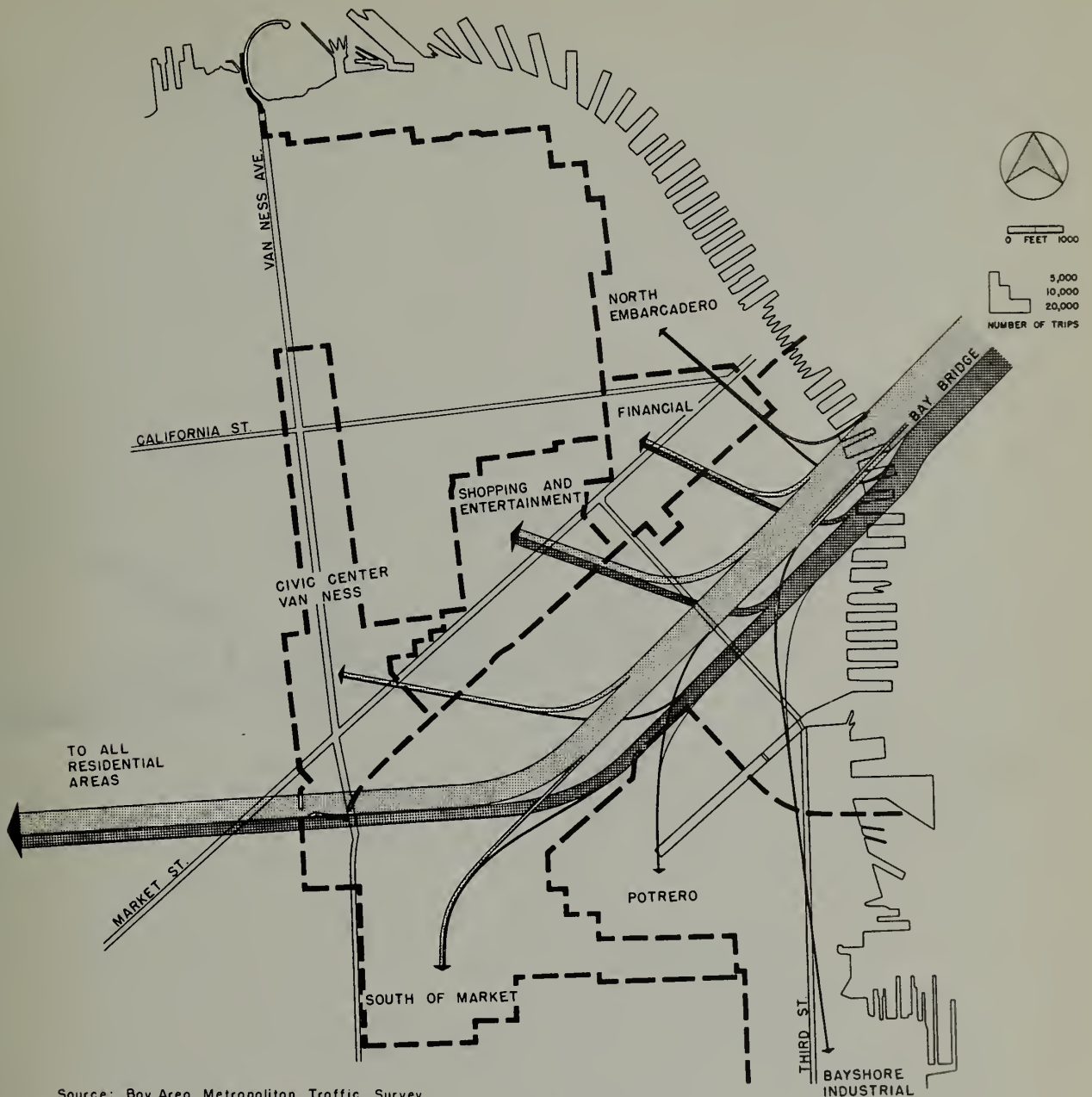
AUTOMOBILE



TRANSIT









DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

TRIPS FOR OTHER PURPOSES

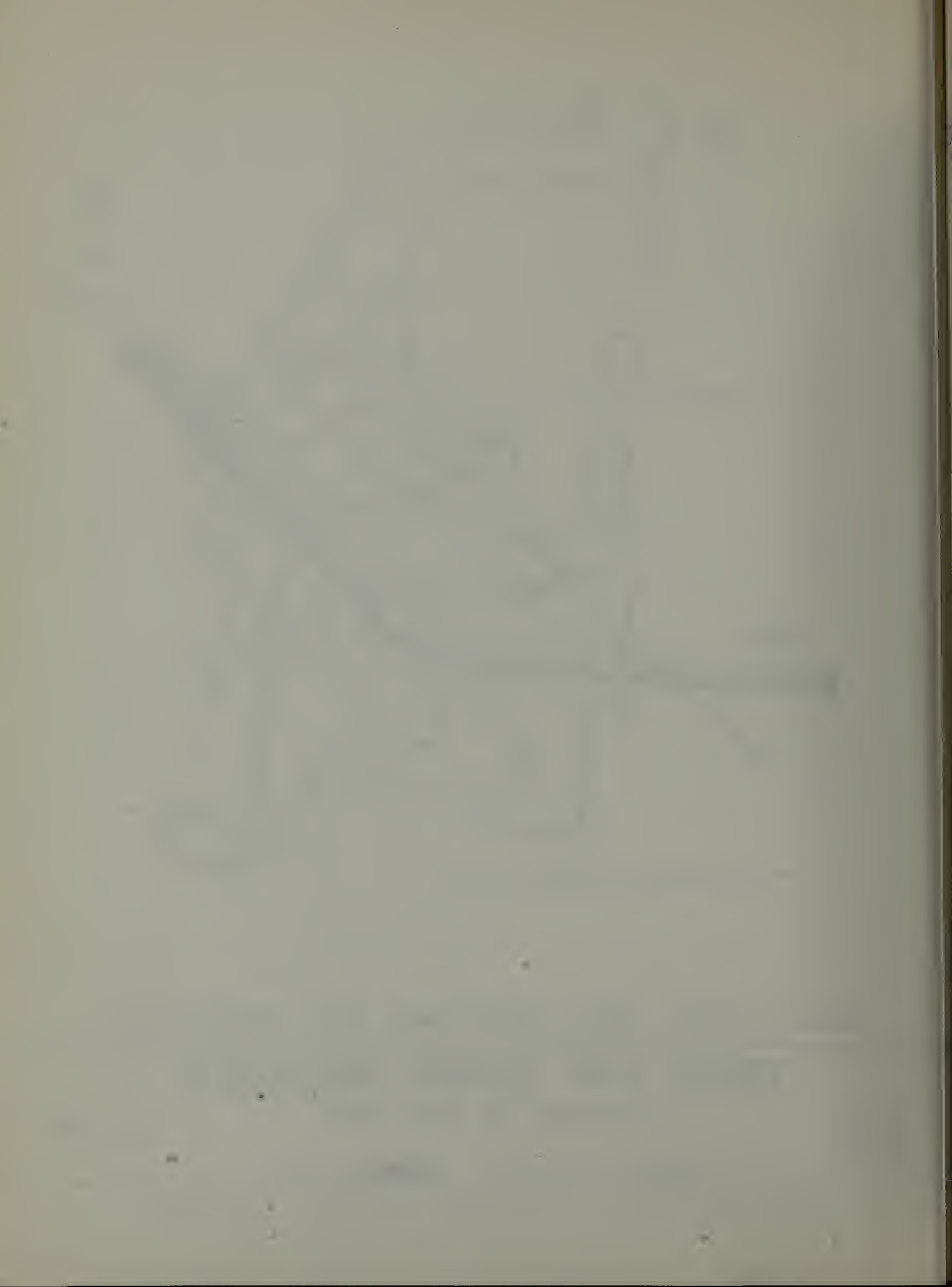
ORIGINS IN EAST BAY

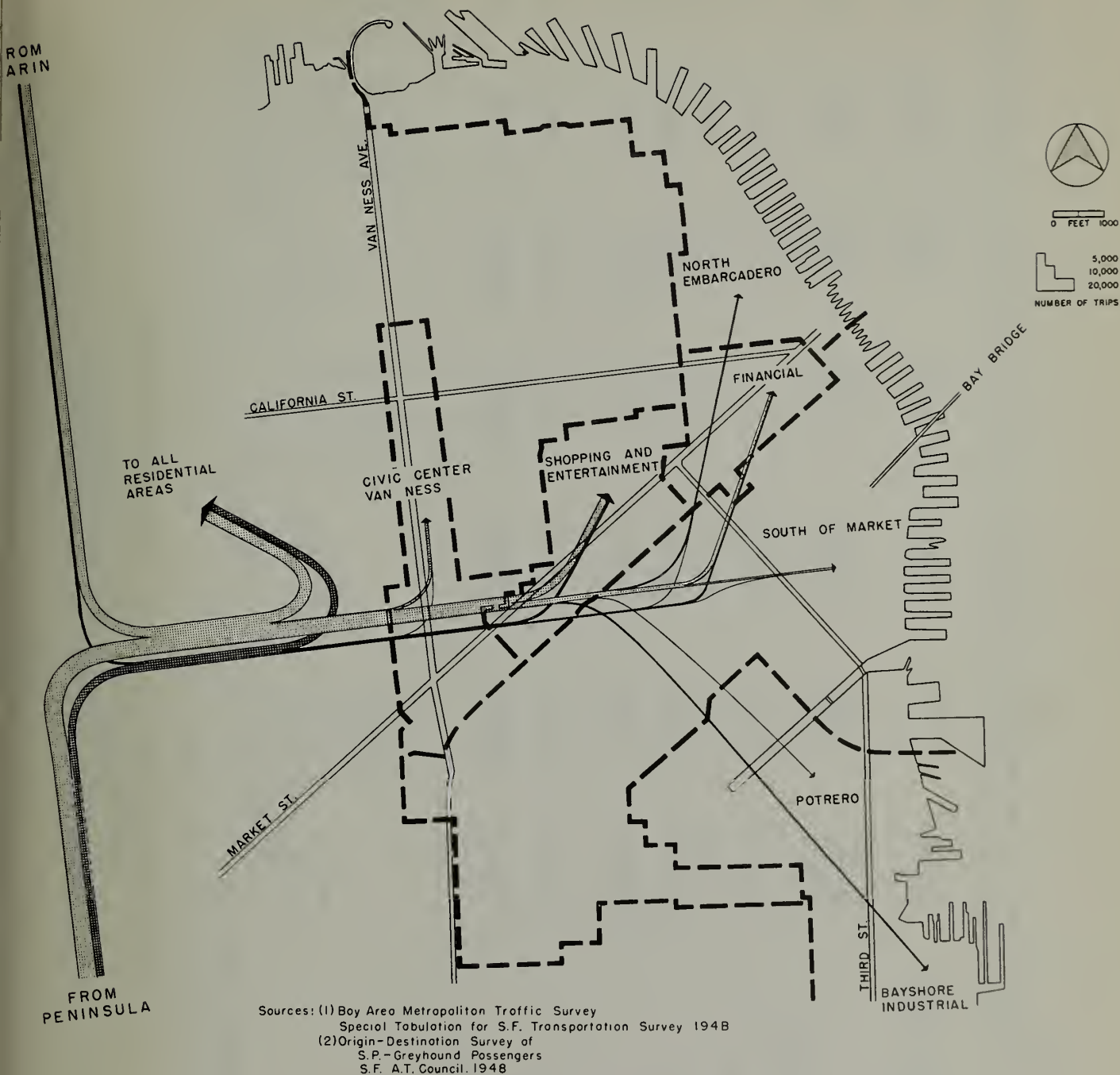
TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM

PLATE 9

 AUTOMOBILE  TRANSIT

SAN FRANCISCO DEPARTMENT OF CITY PLANNING





DAILY TRIPS INTO DOWNTOWN SAN FRANCISCO

## TRIPS FOR OTHER PURPOSES

TYPICAL  
WEEKDAY,  
1947, 7 AM  
TO 7 PM

ORIGINS ON THE PENINSULA  
OR MARIN AND NORTH BAY



 AUTOMOBILE  TRANSIT

PLATE 10

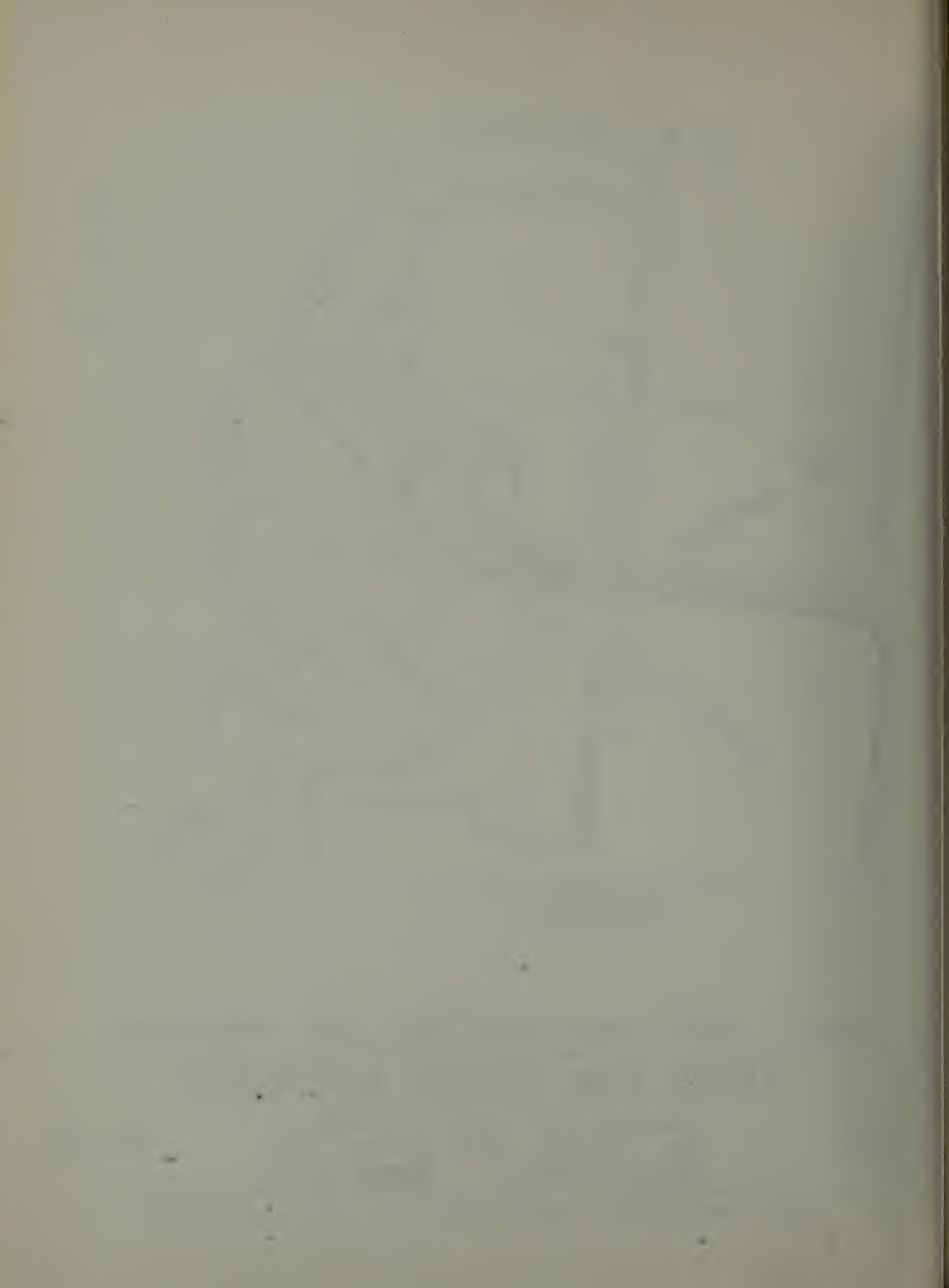




TABLE 14

## \* NON-WORK TRIP DESTINATIONS IN SAN FRANCISCO

Typical Week Day, 1947 - 7AM-7PM

(From Origins in San Francisco and Bay Area Points)

Source: Bay Area Metropolitan Traffic Survey 1947. 7 AM - 7 PM

S. P. Greyhound O-D Survey, Jan., 1948

District of Destination	Total Trips for * Non-Work Purposes			Trips by Auto			Trips by Transit		
	Number	Per Cent of Total Non-Work Trips	Number	Per Cent of Total Trips by Auto	Number	Per Cent of Total Trips by Transit	Number	Per Cent of Total Trips by Transit	Per Cent Transit Trips of Total to District
TOTAL NON-WORK TRIP DESTINATIONS IN SAN FRANCISCO 7 AM -- 7 PM*	405,779	100.0%	267,429	100.0%	138,350	100.0%			
To Residential Community Areas (Not Including trips to home)	197,883	48.8%	163,540	61.2%	34,343	24.8%			17.4%
To Working Areas	207,896	51.2%	103,889	38.8%	104,007	75.2%			50.0%
1. Metropolitan Traffic District	184,012	45.3%	88,632	33.1%	95,380	69.0%			51.8%
Financial District	25,027	6.2%	12,949	4.8%	12,078	8.8%			48.3%
Downtown Shopping and Entertain- ment District	81,755	20.1%	32,181	12.1%	49,574	35.8%			60.6%
Uptown Shopping (Civic Center- Van Ness) District	41,246	10.2%	22,347	8.3%	18,899	13.7%			45.8%
South-of-Market	26,023	6.4%	14,908	5.6%	11,115	8.0%			42.7%
North Embarcadero	9,961	2.4%	6,247	2.3%	3,714	2.7%			37.3%
2. Industrial Districts (Potrero, Bay- shore, Hunters Point, Visitacion)	23,884	5.9%	15,257	5.7%	8,627	6.2%			36.1%

\* NOTE: Non-Work Trip Purposes: Trips to transact business; to obtain medical or dental attention; to go to school; to go to social or recreational activities; to eat meal; to go shopping; to change travel mode; to serve passenger.  
(Trips home not included)

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TABLE 15

NON-WORK\* TRIPS FROM BAY AREA POINTS INTO SAN FRANCISCO  
Typical Week Day, 1947, 7 AM - 7 PM

Source: Bay Area Metropolitan Traffic Survey 1947.  
 And S. P. - Greyhound O-D Survey, Jan 1948.

District of Destination in San Francisco	Total Trips for Non-Work* Purposes from Within and into San Francisco	Origins within San Francisco	Origin with-Per Cent in Bay Area from out- side San Francisco	
<hr/>				
TOTAL NON-WORK* TRIP DESTINATIONS IN SAN FRANCISCO 7 AM - 7 PM	<u>405,779</u>	<u>351,343</u>	<u>54,436</u>	<u>13.4%</u>
To Residential Community Areas	197,883	171,368	26,515	13.4%
To Working Areas	<u>207,896</u>	<u>179,975</u>	<u>27,921</u>	<u>13.4%</u>
1. Metropolitan Traffic District	<u>184,012</u>	<u>157,338</u>	<u>26,674</u>	<u>14.5%</u>
Financial District	25,027	19,166	5,861	23.4%
Downtown Shopping and Entertainment District	81,755	70,239	11,516	14.1%
Uptown Shopping (Civic Center-Van Ness District)	41,246	37,173	4,073	9.9%
South-of-Market District	26,023	22,630	3,393	13.0%
Morth Embarcadero District	9,961	8,130	1,831	18.4%
2. Industrial Districts (Potrero, Bayshore, Hunters Point, Visitacion)	<u>23,884</u>	<u>22,637</u>	<u>1,247</u>	<u>5.2%</u>

\*NOTE: Non-Work Trip Purposes: Trips to transact business; to obtain medical or dental attention; go to school; to go to social or recreational activities; to eat meal; to go shopping; to change travel mode; to serve passenger (Does not include trips home from San Francisco origin)





TABLE 16

SHOPPING, ERRAND, AND SOCIAL-RECREATIONAL TRIPS IN SAN FRANCISCO  
TO DOWNTOWN AND TO RESIDENTIAL COMMUNITY DISTRICTS

(Typical Week Day, 1947, 24 Hour Period)

Origins in San Francisco and in Bay Area Points

Source: Bay Area Metropolitan Traffic Survey, Tabulation #8227, March 13, 1950.

District of Destination	Total Shopping, Errand, Social-Recreational Trips*		Trips Within Same District		Trips Originating in Other District or Outside San Francisco	
	Number	Per Cent of Total	Number	Number	Per Cent of Total	Per Cent Originating Outside District
TOTAL DAILY SHOPPING, ERRAND, AND SOCIAL-RECREATIONAL TRIPS TO DESTINATIONS IN SAN FRANCISCO ( 24 HOURS)	<u>347,727</u>	<u>100.0%</u>	<u>80,125</u>	<u>267,602</u>	<u>100.0%</u>	<u>77.0%</u>
I. <u>Trips to Residential Community Areas</u>	<u>222,142</u>	<u>63.8%</u>	<u>75,551</u>	<u>146,591</u>	<u>54.8%</u>	<u>66.0%</u>
1. Outer Richmond	20,158	5.8%	7,245	12,913	4.8%	64.1%
2. Richmond	17,136	4.9%	4,256	12,880	4.8%	75.2%
3. Marina	14,458	4.2%	5,326	9,132	3.4%	63.2%
4. Downtown Residential	27,567	7.9%	7,237	20,330	7.6%	73.7%
5. Western Addition	21,458	6.2%	5,439	16,019	6.0%	74.7%
6. Buena Vista	17,306	5.0%	4,056	13,250	5.0%	76.6%
7. Mission )--						
8. Potrero-Bernal)	44,954	12.9%	17,821	27,133	10.1%	60.4%
9. Bayshore	8,361	2.4%	4,711	3,650	1.4%	43.7%
10. Outer Mission	10,371	3.0%	3,612	6,759	2.5%	65.2%
11. West-of-Twin Peaks	22,826	6.5%	6,536	16,290	6.1%	71.4%
12. Sunset	17,547	5.0%	9,312	8,235	3.1%	46.9%

\*NOTE: Includes: Trips to shop, to obtain medical or dental attention, to go to social or recreational activity, or to eat meal.





TABLE 16 (Contd)

Shopping, Errand and Social-Recreation Trips in San Francisco  
to Downtown and to Residential Community Districts.

District of Destination	Total Shopping, Errand, Social-Recreational Trips*		Trips Within Same District		Trips Originating in Other District or Outside San Francisco	
	Number	Per Cent of Total	Number	Number	Per Cent of Total	Per Cent Originating Outside District
II. <u>Trips to Working Areas</u>						
1. Metropolitan Traffic District	<u>122,633</u>	<u>35.3%</u>	<u>4,534</u>	<u>118,099</u>	<u>44.2%</u>	<u>96.3%</u>
Shopping Districts (Downtown & Uptown)	<u>117,997</u>	<u>34.0%</u>	<u>3,573</u>	<u>114,424</u>	<u>42.8%</u>	<u>97.0%</u>
Balance of M.T. D.	94,549	27.2%	3,052	91,497	34.3%	96.8%
	23,448	6.8%	521	22,927	8.5%	97.8%
2. Industrial Districts (Potrero, Bayshore)	<u>4,636</u>	<u>1.3%</u>	<u>961</u>	<u>3,675</u>	<u>1.4%</u>	<u>79.3%</u>
III. <u>Trips to Parks &amp; Military Reservations</u>	<u>2,952</u>	<u>0.9%</u>	<u>40</u>	<u>2,912</u>	<u>1.0%</u>	<u>98.6%</u>

\* NOTE: Includes: Trips to shop, to obtain medical or dental attention, to go to social or recreational activity, or to eat meal.



TABLE 17

CENTRAL BUSINESS DISTRICT VS 15 SUBURBAN  
SHOPPING CENTERS AND BUSINESS DISTRICTS

Trips to Commercial Districts in the Washington D. C. Metropolitan Area<sup>13</sup>  
(Typical Week Day, 1948)

PURPOSE OF TRIP	Total Daily Trips To Commercial Dis- tricts in the Wash- ington D. C. Metro- politan Area--1948	To the Central Business Dis- trict of Wash- ington D. C.	To 15 Subur- ban Shopping Centers and Business Dis- tricts	To Washington D. C. Business District Per Cent of Total
<u>Total Trips (Wash. D. C. Met. Area Com- mercial Districts)</u>	<u>174,186</u>	<u>107,152</u>	<u>67,034</u>	<u>62.7%</u>
<u>Total, Work &amp; Business Trips</u>	<u>86,241</u>	<u>57,692</u>	<u>18,549</u>	<u>66.9%</u>
Trips to Work	63,435	48,881	14,554	77.0%
Business Trips	12,806	8,811	3,995	68.8%
<u>Total Shopping &amp; Other Trips</u>	<u>97,945</u>	<u>49,460</u>	<u>48,485</u>	<u>50.1%</u>
Shopping Trips	49,046	25,123	23,923	51.2%
Social-Recreation Trips	29,239	14,753	14,486	50.5%
Other Trips	19,660	9,584	10,076	48.7%
<u>Mode of Travel</u>				
<u>Total Trips</u>	<u>174,186</u>	<u>107,152</u>	<u>67,034</u>	<u>62.7%</u>
Trips by Auto & Taxi	96,162	40,251	55,911	41.9%
Trips by Transit	78,024	66,901	11,123	85.7%
Per Cent by Transit	44.8%	62.4%	16.6%	--

<sup>13</sup>Gordon B. Sharpe "Travel to Commercial Centers of the Washington DC Metropolitan Area" Bulletin 79 Highway Research Board, Washington D. C., 1953.

# MEMORANDUM

TO : THE PRESIDENT  
FROM : THE SECRETARY OF DEFENSE  
SUBJECT: [Illegible]

1. [Illegible text]

2. [Illegible text]

3. [Illegible text]

[Illegible]	[Illegible]	[Illegible]	[Illegible]	[Illegible]
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[Illegible]	[Illegible]	[Illegible]	[Illegible]	[Illegible]
[Illegible]	[Illegible]	[Illegible]	[Illegible]	[Illegible]
[Illegible]	[Illegible]	[Illegible]	[Illegible]	[Illegible]
[Illegible]	[Illegible]	[Illegible]	[Illegible]	[Illegible]

4. [Illegible text]

5. [Illegible text]

6. [Illegible text]

7. [Illegible text]

8. [Illegible text]

9. [Illegible text]

10. [Illegible text]

11. [Illegible text]

12. [Illegible text]



TABLE 18

MODE OF TRAVEL BY SHOPPERS TO OTHER CITIES' CENTRAL BUSINESS DISTRICTS<sup>14</sup>

CITY	Population of Metropolitan Area, 1950	Year of Traffic or Shopping Survey	Mode of Travel (Per Cent)			
			Transit	Auto	Taxi	Walk
Philadelphia, Pa.	3,199,637	1946	88 <sup>a</sup>	8	1	3
Boston, Mass.	2,177,621	1953	75	22	1	2
Washington, D. C.	1,464,089	1948	75	21	4	*
Houston, Texas	806,701	1953	43	55	2	*
Seattle, Wash.	726,464	1953	60	40	-	-
Vancouver, B. C.	536,154	1953	63	28	-	9
Atlanta, Ga.	507,887	1953	56	39	1	4
Wilmington, Del.	268,387	1947	39	45	-	16
Spokane, Washington	221,561	1952	51	40	-	9
Albuquerque, N. M.	145,673	1950	47	53	-	*
Racine, Wisc.	109,105	1949	38	61	1	*
Hagerstown, Md.	45,000	1946	26	44	4	26
Appleton, Wisc.	39,172	1953	8	91	1	*

<sup>14</sup>Alan M. Vorhees, Gordon B. Sharpe and J. T. Stegmaier, "Shopping Habits and Travel Patterns" Technical Bulletin No. 24, Urban Land Institute. Washington, D. C. March 1955

NOTES: (a) 13 per cent by suburban railway

\* Figures not available



TABLE 19

REASONS FOR COMING TO DOWNTOWN KANSAS CITY GIVEN BY CUSTOMERS OF 14 DOWNTOWN STORES<sup>15</sup>

<u>Reasons For Coming Downtown</u>	<u>Percentages</u>	
	<u>Thursday</u>	<u>Saturday</u>
To Shop	61.1%	60.0%
To Work	21.2%	11.4%
To Get Medical or Dental Attention	3.2%	7.8%
To Keep Appointments with Friends	3.1%	5.1%
To Attend Movies, Theaters, Public Events	1.5%	4.7%
To Go to Beauty Parlors, etc.	1.9%	3.2%
To Pay Bills	1.3%	3.0%
To Go to Clubs or Attend Meetings	2.0%	2.1%
Other	4.7%	2.7%

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<sup>15</sup>Downtown Transportation Survey, Community Services, Inc., Kansas City, Missouri.  
1953



# VIII. BAY AREA COMMUNITIES' DAILY TRIPS INTO SAN FRANCISCO

.....

On a typical week day in 1954, 188,921 persons entered San Francisco by automobile, train, or bus in a 24 hour period (excluding long distance inter-city schedules). Of these, 182,726 came on daily trips into the city from communities of the nine counties of the San Francisco Bay Area.<sup>16</sup>

About 100,000 of these suburban dwellers taking daily trips into San Francisco were "commuters", made famous in feature news stories and the New Yorker Magazine, persons on daily journeys to work and to other work destinations. This category, however, also includes all trips taken during the course of the day's work (which in the Bay Area Metropolitan Traffic Survey in 1947 were found to constitute about 27 per cent of all trips to work destinations, and were nine-tenths by private automobile).

These figures were ascertained by the Department of City Planning from data provided it in "raw" form from studies of origins and destinations of automobile and transit passengers of the entire San Francisco Bay Area by Parsons, Brinckerhoff, Hall, and Macdonald, consulting engineers for the San Francisco Bay Area Rapid Transit Commission.<sup>17</sup> These studies are part of the the comprehensive San Francisco Bay Area Rapid Transit Study now under way. Analyses, and conclusions reached in this present report have been arrived at independently from those that will be published by the consultants in their survey report in August 1955.

Forty per cent of suburban daily trips into San Francisco came from Alameda and Contra Costa Counties (72,340), sixteen per cent from Marin County and other North Bay points (38,844), and forty-five per cent originated in San Mateo and Santa Clara Counties on the Peninsula (81,562).

From Alameda and Contra Costa Counties, commuters or those with work destinations in San Francisco amounted to 39,851, (or 55.1 per cent of all daily trips from those two counties). Marin and North Bay commuters totaled 13,560 (47 per cent of all that area's daily trips into San Francisco). From the Peninsula came 46,047 commuters, or 56.5 per cent of all daily trips from the Peninsula into San Francisco.

To points in San Francisco's downtown (and surrounding) districts were bound more than half of these daily suburban trips into San Francisco (56 per cent), or into an expanded version of the Metropolitan Traffic District used in the 1947-1948 surveys and studies (Parsons Brinckerhoff's "Sector 01" includes the M.T.D. plus the Downtown Residential Community in which are located Nob Hill, Russian Hill, North Beach, and Telegraph Hill -- See Chart 11).

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<sup>16</sup> Nine counties of the San Francisco Bay Area (also the district of the San Francisco Bay Area Rapid Transit Commission): San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin Counties.

<sup>17</sup> Preliminary data from San Francisco Bay Area Rapid Transit Survey, Parsons, Brinckerhoff, Hall and Macdonald, engineering consultants for the San Francisco Bay Area Rapid Transit Commission (provided to the Department of City Planning as "raw data" tabulated and analyzed by this Department). 1954.





The southeastern industrial districts (plus the Bayshore Residential Community -- Parsons Brinckerhoff's "Sector 02") were the destination of 14 per cent of these daily trips into San Francisco from Bay Area points.

The residential community areas of the city (less Bayshore Community and Downtown Residential Community -- "Sector 03" in Parsons Brinckerhoff computations) were the destination of roughly 30 per cent of the total San Francisco-bound suburban trips.

These proportions show relatively little proportional over-all change in destination pattern from data provided on suburban trips into San Francisco in 1947 as tallied in B.A.M.T.S. computations. The total volumes are larger (partly accounted for by the 24-hour period as opposed to the 12-hour 7AM-7PM period used for much of the 1947 computations), and much larger proportions used private automobiles in 1954 than in 1947, but the proportions bound for different major areas in the city have not changed materially.

Commuter or work trips were mostly (71 per cent) bound for the downtown and surrounding districts of the expanded Metropolitan Traffic District. Almost half of these work trips to downtown areas (46 per cent) came by public transportation -- Southern Pacific Peninsula steam trains, Key System transbay electric trains and buses, and Pacific Greyhound Peninsula and Marin and Contra Costa County buses.

Commuters to parts of San Francisco outside of the Metropolitan Traffic District -- the southeastern industrial districts and the residential community areas -- amounted to 29 per cent of the total, and came from 84 to 92 per cent by private auto.

In 1947, a higher proportion of suburban commuters to the outer residential and industrial areas used public transit. This probably reflected a necessity arising out of scarcity of autos in the immediate post-war years, and a scarcity of housing making it difficult to get a home closer to a job in the outer areas.

#### Purposes of Bay Area Trips into San Francisco

In addition to the approximately 100,000 commuters coming into San Francisco every day, there are about 88,000 coming in for other purposes; of these about one-tenth, or 8686 came in specifically to shop. Urban Land Institute studies discussed above indicate that about another 8,000 coming in for other purposes would end up shopping, giving a total of 16,000.<sup>18</sup> This same study showed that families living 15 miles from Central Business District of Boston took a shopping trip there at least once a month. If this were also true of the Bay Area, it would mean that approximately 16,000 suburban shoppers a day would represent possibly 416,000 Bay Region families that customarily trade in San Francisco's Central Business District.

Social and recreational travel represented 17 per cent of the total in-bound suburban trips, or more than one-third the non-work trips.

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<sup>18</sup> See above, note 9a



Some 32,354 persons came into San Francisco to return home from a trip to Bay Area points. Assuming that half of these are trips home from non-work activities, we could estimate that about 16,000 "reverse commuters" living in San Francisco work in the steel mills of South San Francisco, the San Francisco International Airport shops and facilities (near San Bruno), shipyards on the Oakland Estuary, industrial plants in Berkeley, or petroleum refineries in Richmond or other outlying employment centers.

Outbound trips from San Francisco to Bay Area points showed a total of 38,765 trips with work destinations, but there is reason to believe that a good proportion of these were "on the job" trips involving a special trip during the course of the day's work rather than regular journeys-to-work to place of employment from home.

A comparison of 1954 rapid transit survey data with 1947 Bay Area Metropolitan Traffic Survey figures gives some interesting comparisons of travel across the San Francisco-Oakland Bay Bridge: (See Tables 22 and 23):

- (1) Total trips over the Bay Bridge for a typical 24-hour week-day period decreased from 80,295 to 77,112.
- (2) Trips to work destinations increased from 36,302 to 39,890 per day.
- (3) Trips to school increased from 1,712 to 2,659 per day.
- (4) Shopping trips decreased from 3,617 to 2,744 per day.
- (5) Social and recreational trips and trips home decreased slightly.

(NOTE: Such direct comparisons cannot be given too much weight, because of differences in the way the two surveys may have been conducted, but the general trend shown by the data probably has validity.)





FROM MARIN

OTHER TRIPS  
15,284

WORK TRIPS  
13,560

ALL TRIPS  
28,844

FROM EAST BAY

WORK TRIPS  
39,851

OTHER TRIPS  
32,489

ALL TRIPS  
72,340

SECTOR  
0.1  
NE

SECTOR  
03  
W

SECTOR  
02  
SE

ALL TRIPS  
81,562

WORK TRIPS  
46,047

OTHER TRIPS  
35,515

FROM PENINSULA

Source: Preliminary data from San Francisco Bay Area  
Rapid Transit Commission Survey.  
Parsons, Brinckerhoff, Hall and Macdonald,  
consulting engineers. Spring 1954.



0 FEET 2000

3,000  
10,000  
20,000  
NUMBER OF TRIPS

# DAILY TRIPS INTO SAN FRANCISCO

## TOTAL TRIPS FROM BAY AREA

TYPICAL  
WEEKDAY,  
1954  
24 HOURS



AUTOMOBILE



TRANSIT

PLATE II

SAN FRANCISCO DEPARTMENT OF CITY PLANNING

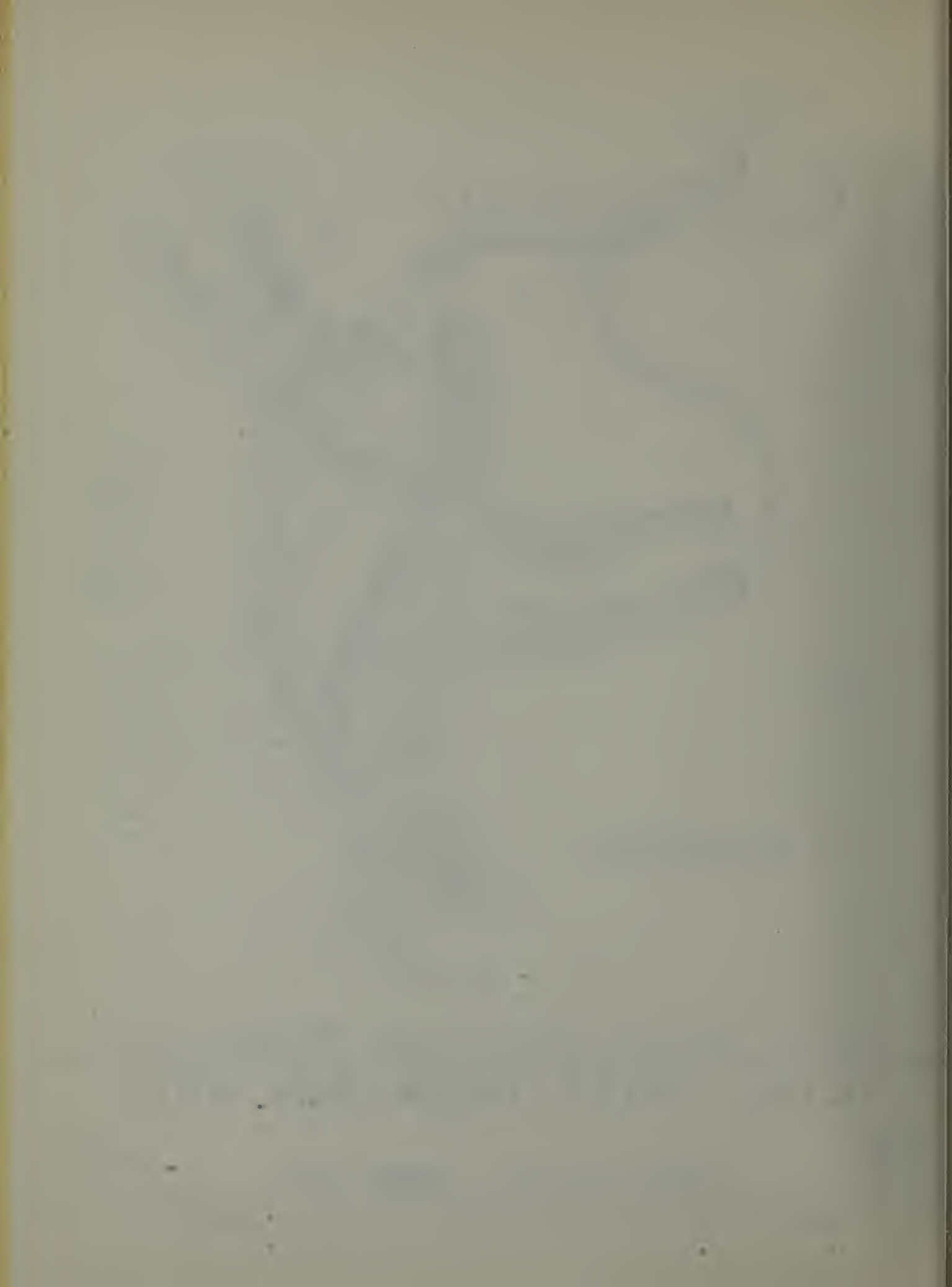


TABLE 20

DAILY TRIPS INTO SAN FRANCISCO FROM BAY AREA POINTS, 1954

(Typical Week Day, 1954, 24 Hours)

Preliminary Data from: San Francisco Bay Area Rapid Transit Survey  
Parsons, Brinckerhoff, Hall, and Macdonald, Consultants.

Origin of Daily Trips into San Francisco	Total Daily Trips into San Francisco	Trips by Automobile	Trips by Train & Bus	Per Cent, Train & Bus Trips of Total
<u>Total "Gateway Entrances"</u> <u>into San Francisco on Typi-</u> <u>cal Week Day, 1954</u>	188,921	141,930	46,981	(a)
<u>Less: Trips originating out-</u> <u>side Bay Area</u>	-6,175	-6,175	(a)	(a)
<u>TOTAL DAILY TRIPS INTO SAN</u> <u>FRANCISCO FROM EIGHT BAY AREA</u> <u>COUNTIES - b.</u>	<u>182,746</u>	<u>135,765</u>	<u>46,981</u>	<u>25.7%</u>
Commute and Work Trips	99,458	62,822	36,636	36.8%
Other trips	83,288	72,943	10,345	12.4%
Per Cent Work Trips	54.4%	46.3%	78.0%	
<u>Trips From Alameda and Contra</u> <u>Costa Counties</u>	<u>72,340</u>	<u>51,688</u>	<u>20,652</u>	<u>29.5%</u>
Commute and Work Trips	39,851	25,437	14,414	36.2%
Other Trips	32,489	26,251	6,238	19.2%
Per Cent Work Trips	55.1%	49.2%	69.8%	
<u>Trips from Marin County and</u> <u>North Bay Points</u>	<u>28,844</u>	<u>22,660</u>	<u>6,184</u>	<u>21.4%</u>
Commute and Work Trips	13,560	8,516	5,044	37.2%
Other Trips	15,284	14,144	1,140	7.5%
Per Cent Work Trips	47.0%	37.6%	81.6%	
<u>Trips From Peninsula Points</u>	<u>81,562</u>	<u>61,417</u>	<u>20,145</u>	<u>24.7%</u>
Commute and Work Trips	46,047	28,869	17,178	37.3%
Other Trips	35,515	32,548	2,967	8.4%
Per Cent Work Trips	56.5%	47.0%	85.3%	

<sup>a</sup>Train and Bus Passengers from outside the Bay Area not tallied.

<sup>b</sup>The 9 counties of the San Francisco Bay Area: San Francisco, San Mateo, Santa Clara, Alameda, Contra Costa, Solano, Napa, Sonoma, and Marin.





DISTRIBUTION WITHIN SAN FRANCISCO OF DAILY TRIPS FROM BAY AREA POINTS  
(Typical Week Day, 1954, 24 Hours)

Preliminary Data From: San Francisco Bay Area Rapid Transit Survey  
Parsons, Brinckerhoff, Hall, and McDonald, Consultants

San Francisco Destination  
of Trip by Survey Sector

Total Daily Trips  
into San Francisco

Trips by  
Automobile

Trips by  
Train & Bus

	Number	Per Cent of Total	Number	Per Cent	Number	Per Cent	Per Cent, Train & Bus Trips of Total
<u>TOTAL DAILY TRIPS INTO SAN FRANCISCO FROM 8 BAY AREA COUNTIES</u>	<u>182,746</u>	<u>100.0%</u>	<u>135,765</u>	<u>100.0%</u>	<u>46,981</u>	<u>100.0%</u>	<u>25.7%</u>
To Sector 01 (North of 16th St. and East of Van Ness)	102,922	56.3%	63,642	46.9%	39,280	83.6%	38.2%
To Sector 02 (South of 16th St. and East of Van Ness & East of John McLaren Park)	25,968	14.2%	22,981	16.9%	2,987	6.4%	11.5%
To Sector 03 (Western residen- tial districts)	53,856	29.5%	49,142	36.2%	4,714	10.0%	8.8%
<u>Total Commute and Work Trips</u>	<u>99,458</u>	<u>100.0%</u>	<u>62,822</u>	<u>100.0%</u>	<u>36,636</u>	<u>100.0%</u>	<u>36.8%</u>
To Sector 01 (NE)	70,672	71.1%	37,878	60.3%	32,794	89.5%	46.4%
To Sector 02 (SE)	13,416	13.5%	11,416	18.2%	2,059	5.6%	15.3%
To Sector 03 (W)	15,311	15.4%	13,528	21.5%	1,783	4.9%	12.6%
<u>Total, Trips for Other Purposes</u>	<u>83,288</u>	<u>100.0%</u>	<u>72,943</u>	<u>100.0%</u>	<u>10,345</u>	<u>100.0%</u>	<u>12.4%</u>
To Sector 01 (NE)	32,250	38.7%	25,764	35.3%	6,486	62.7%	20.1%
To Sector 02 (SE)	12,493	15.0%	11,565	15.9%	928	9.0%	7.4%
To Sector 03 (W)	38,545	46.3%	35,614	48.8%	2,931	28.3%	7.6%



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PURPOSES OF DAILY TRIPS INTO SAN FRANCISCO VIA ALL GATEWAYS  
(Including auto trips from outside the Bay Area)  
Typical Week Day, 1954 — 24 hours

Source: San Francisco Bay Area Transit Survey  
Parsons, Brinckerhoff, Hall & Mcdonald, Consultants

PURPOSES OF DAILY TRIPS INTO SAN FRANCISCO	TOTAL DAILY TRIPS INTO SAN FRANCISCO		VIA BAY BRIDGE		VIA GOLDEN GATE BRIDGE		VIA PENINSULA GATEWAYS	
	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
TOTAL DAILY TRIPS INTO SAN FRANCISCO <sup>a</sup>	188,921	100.0%	77,112 <sup>a</sup>	100.0%	27,964 <sup>a</sup>	100.0%	83,844 <sup>a</sup>	100.0%
Trips to Work Destinations	99,266	52.5%	39,890	51.8%	12,889	46.1%	46,487	55.5%
Trips to School	3,739	2.0%	2,659	3.4%	216	0.8%	864	1.0%
Trips for Shopping	8,686	4.6%	2,744	3.6%	1,431	5.1%	4,511	5.4%
Trips for Social and Recrea- tional Purposes	26,582	14.1%	10,260	13.3%	5,228	18.7%	11,094	13.2%
Trips Returning to Home in San Francisco	32,359	17.1%	13,505	17.5%	4,320	15.4%	14,534	17.3%
Trips for Other Purposes <sup>b</sup>	18,288	9.7%	8,054	10.4%	3,880	13.9%	6,354	7.6%

NOTES: a. These figures differ slightly from totals shown from the nine counties of the San Francisco Bay Region above in Table 20. This is because figures in this table include about 6,000 automobile trips from outside the Bay Region, and because "Gateway" figures would not necessarily correspond with "origin" figures. For instance, Napa County traffic might enter San Francisco via the Bay Bridge, and Southern Alameda County traffic might enter San Francisco via the San Mateo Bridge and Bayshore Highway. Transcontinental train passengers and air passengers not included in above total.

b. "Other Purposes." Includes trips to transact business, obtain medical or dental attention, eat meal, change travel mode, serve passengers, and other purposes not specified.



TABLE 23

COMPARISON OF PURPOSES OF DAILY TRIPS INTO SAN FRANCISCO  
VIA BAY BRIDGE, 1947 AND 1954  
 (Typical Week Day, 24 Hours)

PURPOSES OF DAILY TRIPS INTO SAN FRANCISCO VIA BAY BRIDGE	1947 <sup>a</sup>		1954 <sup>b</sup>	
	Number	Per Cent	Number	Per Cent
<u>Total Daily Trips into San Francisco</u> <u>Via Bay Bridge</u>	<u>80,295</u>	<u>100.0%</u>	<u>77,112<sup>c</sup></u>	<u>100.0%</u>
Trips to Work Destinations	36,302	45.2%	39,890	51.3%
Trips to School	1,712	2.1%	2,659	3.4%
Trips for Shopping	3,617	4.5%	2,744	3.6%
Trips for Social and Recreational Purposes	11,457	14.3%	10,260	13.3%
Trips to Home in San Francisco	14,705	18.3%	13,505	17.5%
Trips for Other Purposes <sup>d</sup>	12,502	15.6%	8,054	10.4%

- NOTES: a. Source: Bay Area Metropolitan Traffic Survey. District IV Office of Div. of Highways, California State Department of Public Works. San Francisco. June 1949. Table 2.
- b. Source: San Francisco Bay Area Rapid Transit Survey. Parsons, Brinckerhoff, Hall and Macdonald, consultants for the San Francisco Bay Area Rapid Transit Commission. Spring, 1954.
- c. This total is different from the total shown originating in Alameda and Contra Costa Counties in Table 20, since about 4,500 auto trips from outside the Bay Area are here included.
- d. "Other Purposes." Includes trips to transact business, obtain medical or dental attention, eat meal, change travel mode, serve passengers, and other purposes not specified.





Distribution of Bay Area Commuters and Shoppers Within San Francisco.

Detailed information as to the exact smaller destination districts of suburban daily trips into San Francisco in the 1954 survey had not been tabulated at the time the rapid transit consultants made daily trips data available to the Department of City Planning. Rather, San Francisco destinations were tabulated in three large districts already mentioned above: Sector "01", downtown and surrounding districts; Sector "02", southeast industrial and bordering residential districts; and Sector "03", western residential districts.

Thus, to get an idea of the proportion of trips bound for districts within these areas, it was necessary to rely on the 1946-1947 Bay Area Metropolitan Traffic Survey data, where detailed destination data on 93 small traffic sectors had been tabulated. These sectors were combined into areas approximating the boundaries of downtown districts (Financial, Downtown Shopping, etc.), industrial districts, and residential community areas.

The 1947 B.A.M.T.S. data showed that 22.5 per cent of all suburban daily trips into the City were bound for points in the Financial District. Adding the 16.2 per cent bound for the Downtown Shopping and Entertainment District, we get a total of 38.7 per cent of all suburban daily trips going to the Central Business District. Other districts received suburban daily trips as follows:

Uptown Shopping District (Civic Center-Van Ness)	6.9 per cent
South of Market Industrial District	9.7 per cent
North Embarcadero District	5.8 per cent
Southeast Industrial Districts	4.6 per cent
Total, Metropolitan Traffic District	61.1 per cent
Total, Working Areas	65.7 per cent
Total, Residential Areas	34.3 per cent

In the Financial District over one-fourth of the persons there (28.3 per cent) had come in from outside San Francisco. In the North Embarcadero was also found a high proportion of "outsiders" -- about one-fifth (20.9 per cent). The proportion was lower in the Downtown Shopping and Entertainment District, being about one-seventh (14.9 per cent). Proportions of total daily trips in other districts originating in the suburban areas tended to be lower.

Commuters and others with work destinations from Bay Region communities coming into San Francisco in 1947 came 70.7 per cent into the Metropolitan Traffic District, and almost half of the total coming into San Francisco had destinations in the Central Business District (44.0 per cent). Industrial districts absorbed 26.7 per cent of the work destinations from the suburbs.

In the Financial District, 30.0 per cent of those working there apparently live in the suburbs. In the Downtown Shopping and Entertainment District, the proportion was less, being 19.1 per cent. Only 16.5 per cent of those working in industrial districts lived outside San Francisco, and other low proportions of non-San Francisco dwelling workers were also found in the Uptown Shopping District (13.8 per cent), the South of Market Industrial District (16.7 per cent), and San Francisco's residential community areas (14.0 per cent). In the North Embarcadero Industrial District, however, 22.0 per cent of those with work destinations ending there came from other Bay Area points.



Out-of-town shoppers and others with non-work trip destinations amounted to 13.4 per cent of San Francisco's total daily non-work trips (excluding home-bound trips) in 1947. This same proportion also applied to non-San Franciscans with destinations in residential community areas for shopping or other purposes. Highest concentration of suburban dwellers was (as was also the case with work destinations) in the Financial District, where shoppers and others were from outside the city to the extent of 23.4 per cent. In the Downtown Shopping and Entertainment District, 14.1 per cent of the shopping and other non-work destinations had suburban origins, a considerably smaller proportion than suburban dwellers working in the Financial District and in the Downtown Shopping and Entertainment District. (Actually, most suburban downtown "workers" are occasionally "shoppers" during their noon hour, or on their way to the depot. The statistics merely showed Bay Area residents who took trips to San Francisco especially to shop).

#### Daily Trips into San Francisco Since 1904 -- The Decline of Transit

Even in the 1850's the newly-established city of San Francisco provided a financial, business and shopping center for the Bay Region, and busy packet boats serving Bay ports landed and cast off at the long wharves on the waterfront with great frequency and carrying large numbers of passengers on daily trips into San Francisco.

Regular ferryboat lines to Oakland, Alameda and Marin County were firmly established in their patronage in the 1870's, and connecting interurban steam railway lines had been built on the East Bay and North Bay shores, to provide through rail-ferry service from many communities directly to San Francisco. Regular "commute" (reduced fare) tickets were established, encouraging persons employed in San Francisco to live across the Bay and ride the ferries and trains to and from work every day.

Many Bay Area communities got their start as "bedroom towns" for San Francisco's Central Business District when new rail lines connecting with the ferries were built prior to 1900 and in the early 1900's. Most spectacular of these were subdivisions laid out in the East Bay by the late Francis M. ("Borax") Smith, who also operated the train-ferry system known as the Key System, which now operates transbay electric trains and buses. Considerable patronage was assured the suburban transportation systems in these pre-automobile days from residential areas near suburban rail lines, since they provided the only convenient means of reaching San Francisco. In early days, people "went to the City" for almost any shopping or entertainment need that could not be satisfied at local grocery or dry goods stores.

In 1906, tens of thousands of San Franciscans were rendered homeless by the historic Earthquake and Fire. Many of these were forced to move temporarily to the Peninsula, Marin County, or the East Bay for shelter. Finding established commuting service on the rail and rail-ferry systems, many of these displaced San Franciscans never moved back. Thus commuting, decentralization, and suburban development received a tremendous stimulus at that time.

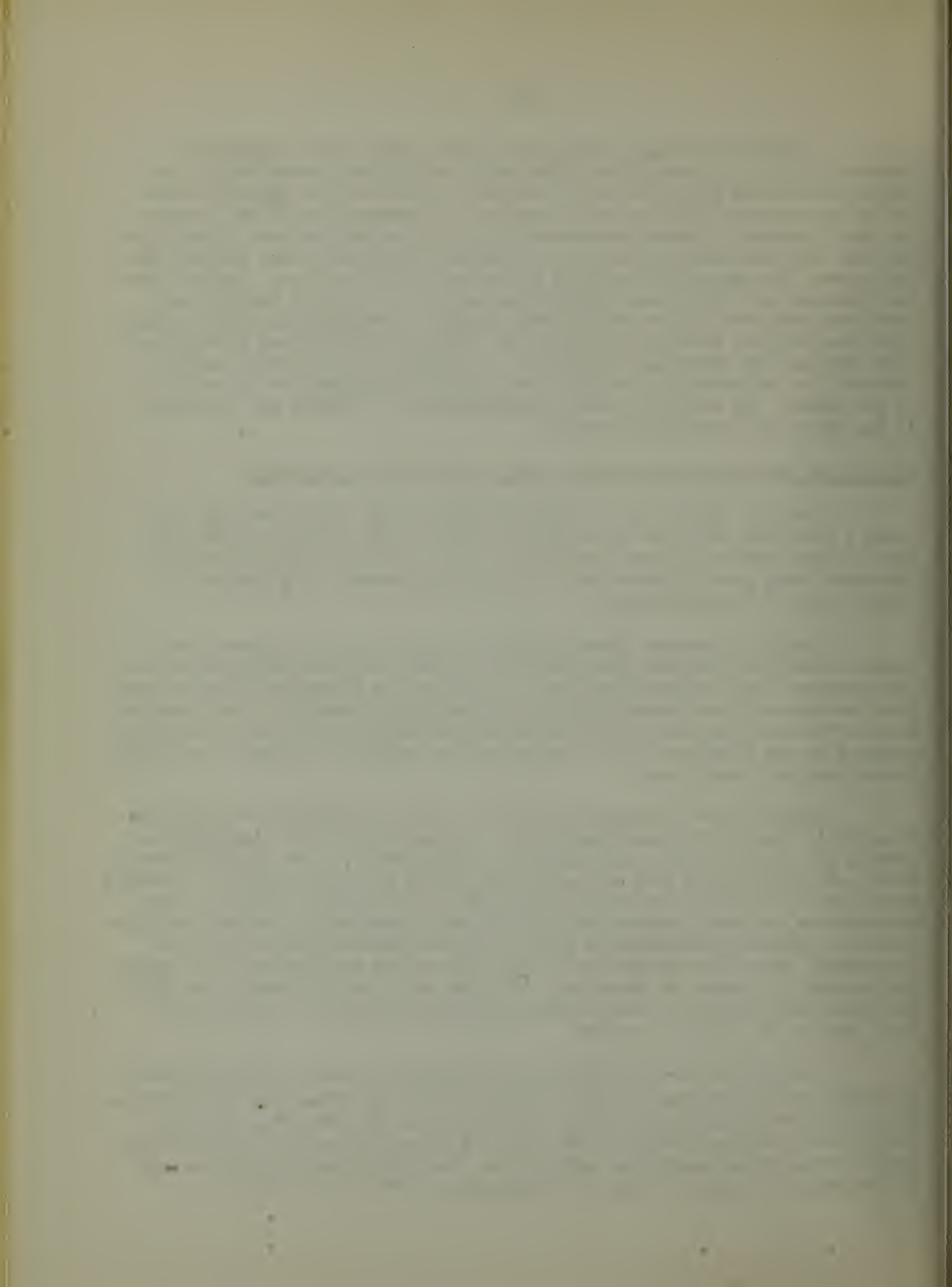




TABLE 24

DAILY TRIPS INTO SAN FRANCISCO FROM BAY AREA POINTS - 1947  
"Typical Weekday", 1947, 7 A. M. -- 7 P. M.

(Data from Bay Area Metropolitan Traffic Survey 1947, and Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers. January 1948)

Destination in San Francisco	Total Daily Trips Into San Francisco		Trips By Auto		Trips By Train & Bus	
	Number	Per Cent of Total Trips into S.F.	Number	Per Cent of Total Auto Trips	Number	Per Cent of Trips by Train and Bus
<u>Total Trips into S. F. From Bay Area in 1947</u>	<u>123,474</u>	<u>100.0%</u>	<u>61,065</u>	<u>100.0%</u>	<u>62,409</u>	<u>100.0%</u>
Work Trips	69,038	55.9%	25,620	42.0%	43,418	69.6%
Other Trips	54,436	44.1%	35,445	58.0%	18,991	30.4%
Total from East Bay	72,222	58.5%	35,436	58.0%	36,786	58.9%
Total from North Bay	15,284	12.4%	8,812	14.4%	6,472	10.4%
Total from Peninsula	35,968	29.1%	16,817	27.6%	19,151	30.7%
<u>Total To Residential Districts of SF</u>	<u>42,340</u>	<u>34.3%</u>	<u>23,432</u>	<u>38.4%</u>	<u>18,908</u>	<u>30.3%</u>
<u>Total To Working Areas of SF</u>	<u>81,134</u>	<u>65.7%</u>	<u>37,633</u>	<u>61.6%</u>	<u>43,501</u>	<u>69.7%</u>
1. <u>To Metropolitan Traffic District</u>	<u>75,487</u>	<u>61.1%</u>	<u>33,512</u>	<u>54.9%</u>	<u>41,975</u>	<u>67.3%</u>
Financial District	27,814	22.5%	7,993	13.1%	19,821	31.8%
Downtown Shopping & Entertainment District	19,938	16.2%	9,347	15.3%	10,591	17.0%
Uptown Shopping District	8,462	6.9%	5,351	8.8%	3,111	5.0%
South-Of-Market District	12,051	9.7%	8,174	13.4%	3,877	6.2%
North Embarcadero District	7,222	5.8%	2,647	4.3%	4,575	7.3%
2. <u>To Industrial Districts</u>	<u>5,647</u>	<u>4.6%</u>	<u>4,121</u>	<u>6.7%</u>	<u>1,526</u>	<u>2.4%</u>
(Potrero, Bayview, Hunters Point, Visitation)						



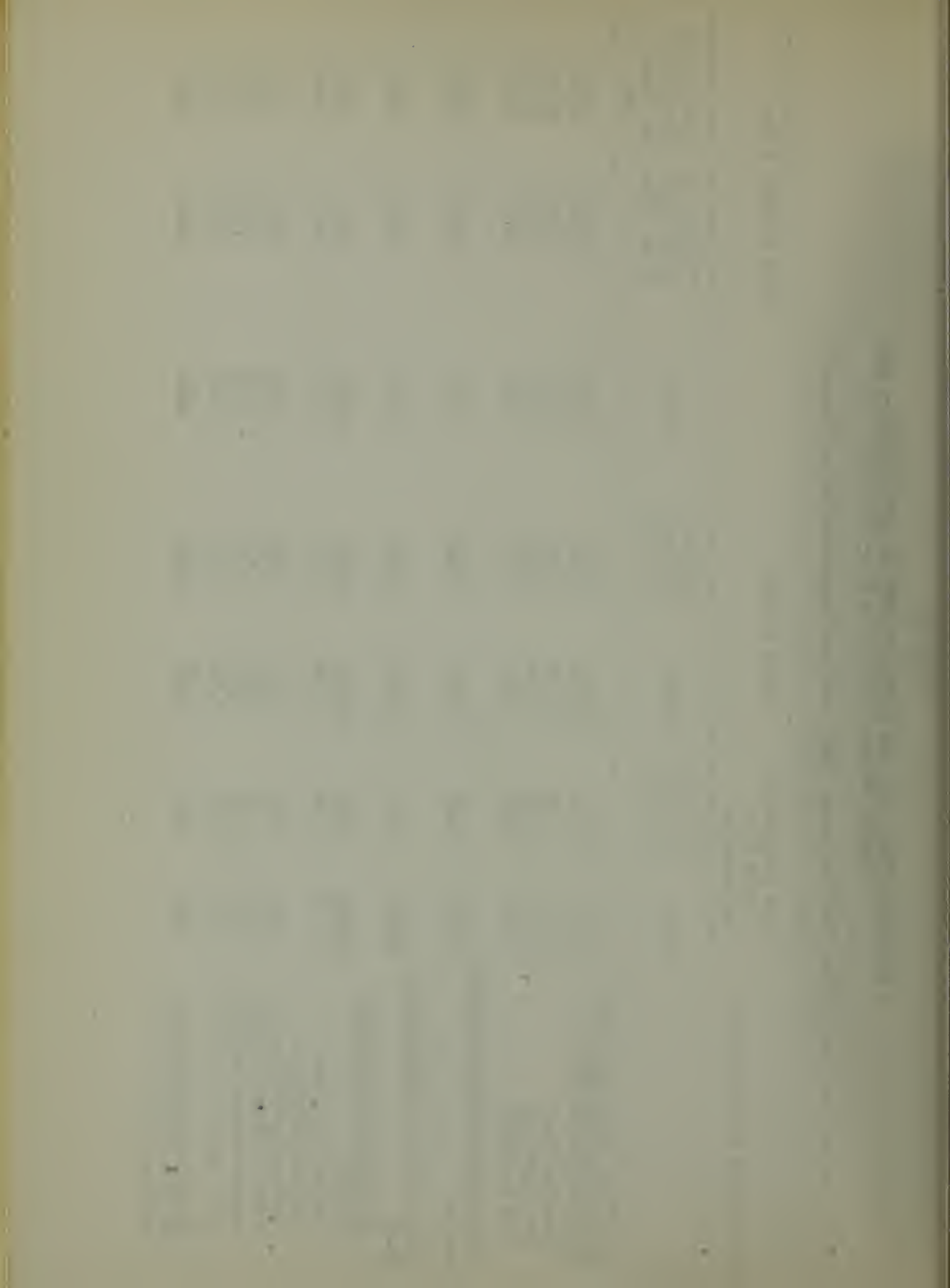
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DAILY WORK TRIPS INTO SAN FRANCISCO FROM BAY AREA POINTS -- 1947  
Typical Weekday, 1947, 7 A. M. -- 7 P. M.

(Data from Bay Area Metropolitan Traffic Survey, 1947, and from Origin-Destination Survey of Southern Pacific-Greyhound Passengers, January 1948)

Destination in San Francisco	Total Daily Work Trips into San Francisco		Trips By Auto		Number	Trips By Train & Bus	
	Number	Per Cent of Total into S.F.	Number	Per Cent of Total Auto Trips		Per Cent of Total Train & Bus Trips	Per Cent of Total Trips By Train & Bus
<u>Total Work Trips into S. F.</u>							
<u>From Bay Area in 1947</u>	<u>69,038</u>	<u>100.0%</u>	<u>25,620</u>	<u>100.0%</u>	<u>43,418</u>	<u>100.0%</u>	<u>62.9%</u>
From East Bay	37,059	53.7%	14,180	55.3%	22,879	52.9%	61.7%
From North Bay	8,951	13.0%	3,826	15.0%	5,125	11.8%	57.3%
From Peninsula	23,028	33.3%	7,614	29.7%	15,414	35.5%	66.9%
<u>Total To Residential Districts in S. F.</u>	<u>15,825</u>	<u>22.9%</u>	<u>6,554</u>	<u>25.6%</u>	<u>9,271</u>	<u>21.4%</u>	<u>58.6%</u>
<u>Total To Working Districts in S. F.</u>	<u>53,213</u>	<u>77.1%</u>	<u>19,066</u>	<u>74.4%</u>	<u>34,147</u>	<u>78.6%</u>	<u>64.2%</u>
1. <u>To Metropolitan Traffic District</u>	<u>48,813</u>	<u>70.7%</u>	<u>16,051</u>	<u>62.7%</u>	<u>32,762</u>	<u>75.4%</u>	<u>67.1%</u>
Financial District	21,953	31.8%	4,742	18.5%	17,211	39.6%	78.4%
Downtown Shopping & Entertainment District	8,422	12.2%	2,215	8.7%	6,207	14.3%	73.7%
Uptown Shopping District	4,389	6.3%	2,017	7.9%	2,372	5.4%	54.0%
South-of-Market District	8,658	12.6%	5,413	21.1%	3,245	7.5%	37.5%
North Embarcadero District	5,391	7.8%	1,664	6.5%	3,727	8.6%	69.1%
2. <u>To Industrial Districts (Potrero, Bayview, Hunters' Point, Visitacion)</u>	<u>4,400</u>	<u>6.4%</u>	<u>3,015</u>	<u>11.7%</u>	<u>1,385</u>	<u>3.2%</u>	<u>31.5%</u>



TOTAL DAILY TRIPS "FOR OTHER PURPOSES" (THAN WORK)<sup>a</sup>  
IN SAN FRANCISCO FROM BAY AREA POINTS -- 1947

Typical Weekday, 1947 - 7 A. M.-7 P. M.

(Bay Area Metropolitan Traffic Survey data, and data from Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers in San Francisco)

Destination in San Francisco	Total Daily Trips "For Other Purposes" Into San Francisco		Trips By Auto		Trips By Train & Bus	
	Number	Per Cent of Total Daily "Other" Trips	Number	Per Cent of Total Auto Trips	Number	Per Cent of Total Train & Bus Trips Of Total
Total Daily "Other" Trips <sup>a</sup> Into San Francisco From Bay Area Points in 1947	54,436	100.0%	35,445	100.0%	18,991	34.9%
From East Bay	35,163	64.6%	21,256	60.0%	13,907	73.2%
From North Bay	6,333	11.6%	4,986	14.0%	1,347	7.1%
From Peninsula	12,940	23.8%	9,203	26.0%	3,737	19.7%
To Residential Districts In S. F.	26,515	48.7%	16,878	47.6%	9,637	50.7%
To Working Districts in S. F.	27,921	51.3%	18,567	52.4%	9,354	49.3%
1. Metropolitan Traffic District	26,674	49.0%	17,461	49.3%	9,213	48.5%
Financial District	5,861	10.8%	3,251	9.2%	2,610	13.7%
Downtown Shopping & Entertainment District	11,516	21.1%	7,132	20.1%	4,384	23.1%
Uptown Shopping District	4,073	7.5%	3,334	9.4%	739	3.9%
South-of-Market District	3,393	6.2%	2,761	7.8%	632	3.3%
North Embarcadero District	1,831	3.4%	983	2.8%	848	4.5%
2. Industrial Districts (Potrero, Bayview, Hunters Point, Visitation)	1,247	2.3%	1,106	3.1%	141	0.8%

<sup>a</sup> "Other Purposes": Includes Trips to Shop, to School, to obtain Medical or Dental attention, to eat meal, for social or recreational activities, to change travel mode, or to serve passengers.



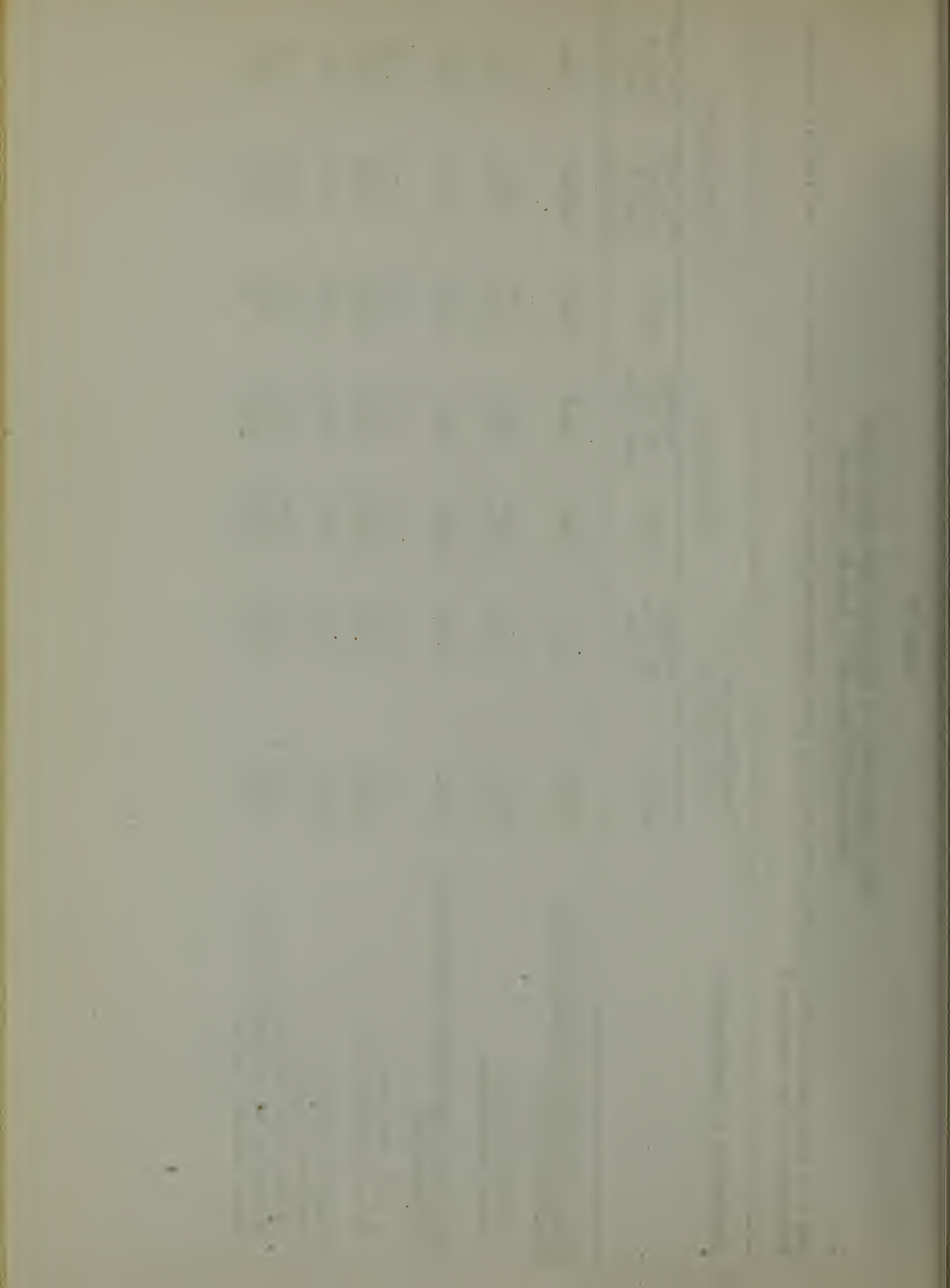


TABLE 27

DAILY TRIPS INTO SAN FRANCISCO FROM THE EAST BAY  
Typical Weekday, 1947 - 7 A. M. - 7 P. M.

(Bay Area Metropolitan Traffic Survey Data and Data from Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers in San Francisco)

Destination in San Francisco	Total Trips to S. F. From East Bay		Trips By Auto		Trips By Train & Bus	
	Number	Per Cent of Total Trips	Number	Per Cent of Total Auto Trips	Number of Total Train & Bus Trips	Per Cent Train & Bus of Total
<u>Total Daily Trips into San Francisco</u> <u>From the East Bay</u>	<u>72,222</u>	<u>100.0%</u>	<u>35,436</u>	<u>100.0%</u>	<u>36,786</u>	<u>50.9%</u>
Work Destinations	37,059	51.3%	14,180	40.0%	22,879	61.7%
Other Destinations	35,163	48.7%	21,256	60.0%	13,907	39.6%
<u>Total Daily Work Trips To San Francisco</u> <u>From East Bay</u>	<u>37,059</u>	<u>100.0%</u>	<u>14,180</u>	<u>100.0%</u>	<u>22,879</u>	<u>61.7%</u>
To S. F. Residential	6,606	17.8%	3,386	23.9%	3,220	48.8%
To S. F. Working Areas	<u>30,453</u>	<u>82.2%</u>	<u>10,794</u>	<u>76.1%</u>	<u>19,659</u>	<u>64.6%</u>
Financial District	12,981	35.0%	3,010	21.2%	9,971	76.8%
Downtown Shopping &						
Entertainment District	4,440	12.0%	1,280	9.1%	3,160	71.2%
Balance of Metro. Traffic District	10,956	29.6%	5,031	35.4%	5,925	54.1%
Outer Industrial Areas	2,076	5.6%	1,473	10.4%	603	29.0%



(TABLE 27 CONTD.)  
DAILY TRIPS INTO SAN FRANCISCO FROM THE EAST BAY

Destination in San Francisco	Total Trips to S. F. From East Bay		Trips By Auto		Trips By Train & Bus		
	Number	Per Cent of Total Trips	Number	Per Cent of Total Auto Trips	Number	Per Cent of Total Train & Bus Trips	Per Cent Train & Bus of Total
							Total
<u>Total Daily Trips For Other Purposes into S. F. From East Bay</u>	<u>35,163</u>	<u>100.0%</u>	<u>21,256</u>	<u>100.0%</u>	<u>13,907</u>	<u>100.0%</u>	<u>39.6%</u>
To S. F. Residential Districts	17,085	48.6%	10,939	51.5%	6,146	44.2%	36.0%
To S. F. Working Area	<u>18,078</u>	<u>51.4%</u>	<u>10,317</u>	<u>48.5%</u>	<u>7,761</u>	<u>55.8%</u>	<u>42.9%</u>
Financial District	4,047	11.5%	1,866	8.8%	2,181	15.7%	51.0%
Downtown Shopping & Entertainment District	6,961	19.8%	3,525	16.6%	3,436	24.7%	49.4%
Balance of Met. Traffic District	6,404	18.2%	4,401	20.7%	2,003	14.4%	31.3%
Outer Industrial Area	666	1.9%	525	2.4%	141	1.0%	21.2%

1871

1872

1873

1874

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1882

1883

DAILY TRIPS INTO SAN FRANCISCO FROM MARIN AND NORTH BAY POINTS  
AND FROM THE PENINSULA  
Typical Weekday, 1947 - 7 A. M. - 7 P. M.

(Bay Area Metropolitan Traffic Survey Data and Data from the Origin-Destination Survey of Southern Pacific and Pacific Greyhound Passengers in San Francisco)

Destination in San Francisco	Total Trips from North Bay & Peninsula		Trips by Auto		Trips by Train & Bus	
	Number	Per Cent of Total Trips	Number	Per Cent of Total By Auto	Number	Per Cent of Total by Train & Bus Total
<u>Total Daily Trips into San Francisco</u>	<u>51,252</u>	<u>100.0%</u>	<u>25,629</u>	<u>100.0%</u>	<u>25,623</u>	<u>100.0%</u>
<u>From North Bay &amp; Peninsula</u>						
Work Destinations	31,979	62.4%	11,440	44.6%	20,539	80.1%
Other Destinations	19,273	37.6%	14,189	55.4%	5,084	19.9%
<u>Total Daily Work Trips From North</u>	<u>31,979</u>	<u>100.0%</u>	<u>11,440</u>	<u>100.0%</u>	<u>20,539</u>	<u>100.0%</u>
<u>Bay &amp; Peninsula into San Francisco</u>						
From Marin & North Bay	8,951	28.0%	3,826	33.4%	5,125	25.0%
From Peninsula	23,028	72.0%	7,614	66.6%	15,414	75.0%
To S. F. Residential Districts	9,219	28.8%	3,168	27.7%	6,051	29.5%
To S. F. Working Districts	22,760	71.2%	8,272	72.3%	14,488	70.5%
Financial District	8,972	28.0%	1,732	15.1%	7,240	35.3%
Downtown Shopping & Entertainment District	3,972	12.5%	935	8.2%	3,047	14.8%
Balance of Met. Traffic District	7,482	23.4%	4,063	35.5%	3,419	16.6%
Outer Industrial Districts	2,324	7.3%	1,542	13.5%	782	3.8%
						45.7%
						34.9%



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(TABLE 28 CONTD.)  
DAILY TRIPS INTO SAN FRANCISCO FROM MARIN AND NORTH BAY POINTS  
AND FROM THE PENINSULA

Destination in San Francisco	Total Trips from North Bay & Peninsula		Trips by Auto		Trips by Train & Bus	
	Number	Per Cent of Total Trips	Number	Per Cent of Total By Auto	Number	Per Cent of Total by Train & Bus
Total Daily Trips "For Other Pur- poses" From North Bay and Penin- sula Into S. F.	19,273	100.0%	14,189	100.0%	5,084	100.0%
From Marin & North Bay	6,333	32.9%	4,986	35.1%	1,347	26.5%
From Peninsula	12,940	67.1%	9,203	64.9%	3,737	73.5%
To S. F. Residential Districts	9,430	48.9%	5,939	41.9%	3,491	68.7%
To S. F. Working Districts	9,843	51.1%	8,250	58.1%	1,593	31.3%
Financial District	1,814	9.4%	1,385	9.8%	429	8.4%
Downtown Shopping & Entertain- ment District	4,555	23.7%	3,607	25.4%	948	18.7%
Balance of Met. Traffic District	2,893	15.0%	2,677	18.8%	216	4.2%
Outer Industrial Areas	581	3.0%	581	3.0	(Negligible)	-
						7.5%

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Suburban development of the Peninsula received an additional stimulus in 1907 with the completion of the \$10,000,000 ten-mile "Bayshore Cutoff", a new double-track tunnel route of the Southern Pacific Railway. The circuitous hill-climbing single-track Bernal Cut-Circular Avenue route to the Peninsula was replaced by this high-speed route, greatly reducing travel time to the Peninsula, and the characteristic millionaires' estates of Belmont and Atherton saw the intrusion of thousands of suburban commuters' houses at Burlingame, San Mateo, Redwood City and Palo Alto.

In 1911, the Southern Pacific electrified its East Bay interurban steam ferry connection lines from Albany, Berkeley, East Oakland, and Alameda, establishing fast service on 20-minute headways to San Francisco. By this time, the Northwestern Pacific lines serving Marin County were also using multiple-unit electric trains and providing convenient, attractive and frequent service.

Even prior to the opening of the San Francisco-Oakland Bay Bridge and the Golden Gate Bridge, the use of private automobiles (carried on auto ferries) had made inroads on the patronage of this excellent system of interurban electric trains and connecting passenger ferries. This was particularly true of recreational travel on evenings and Sundays. When the two bridges were opened in 1936 and 1937, this trans-bay auto travel was greatly increased. Despite the establishment of faster schedules over the bridges with successor train and bus services, however, public transit patronage entered a decline which has been constant ever since (except for a strong upsurge during World War II when autos were scarce, and gasoline and tires were rationed).

In 1954, for instance, about 12,000,000 passenger crossings over the San Francisco-Oakland Bay Bridge by public transit were made during the year. This is a little more than half the 19,000,000 trans-bay passenger crossings made in 1904 on the interurban train-ferry systems to the East Bay! The 1954 trans-bay annual transit passenger volumes were only one-third the 32,200,000 passenger crossings recorded for the East Bay train-ferry systems for 1907!

In 1953, the Pacific Greyhound carried about 4,700,000 passengers over the Golden Gate Bridge to and from Marin County and North Bay points. This was less than the total carried by the Northwestern Pacific train-ferry system in 1907! (See chart 12).

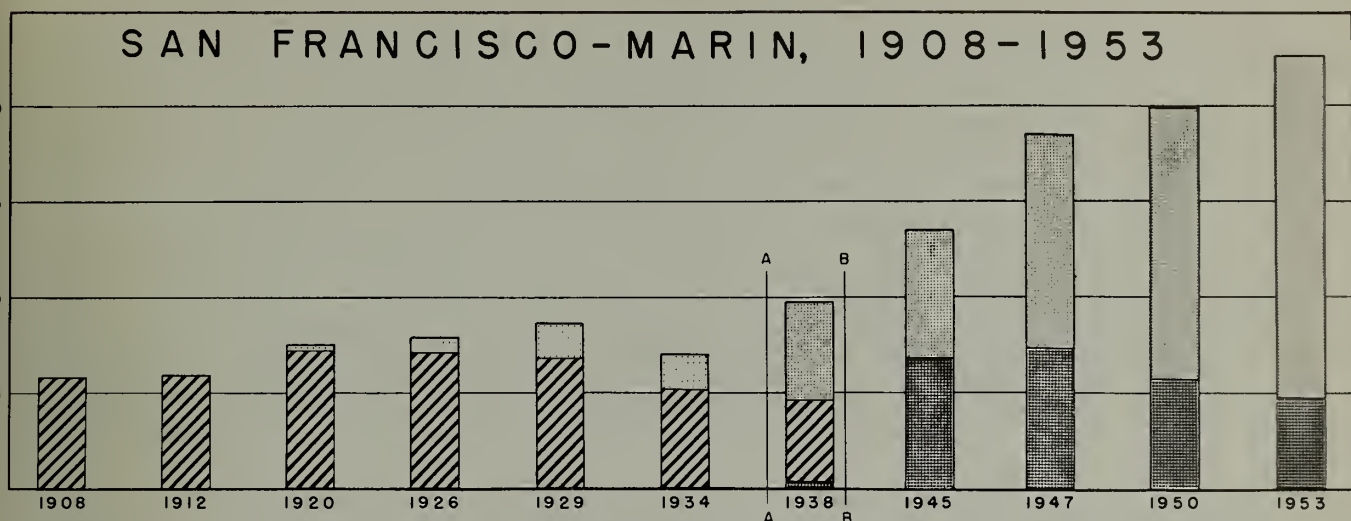
This decline can also be shown in estimates of daily totals of persons entering the city from suburban communities by public transit. About 40,000 persons came into San Francisco in 1912 from East Bay points on the train-ferry systems on a typical week day. In 1954 only half this number, or around 20,000 persons, came in every day on Key System trains and buses and Greyhound buses. From Marin County in 1912, about 7,600 persons per typical week day entered San Francisco on the Northwestern Pacific train-ferry system but in 1954, only 6,184 persons entered San Francisco from Marin and North Bay points via the Greyhound system. (See Tables 29, 30, 31, and 32).

Inclusion of trips by private automobiles into San Francisco from North Bay and East Bay points shows a different picture. Total travel over the bridges has, of course, greatly increased the number of persons entering the city.





# TRANSBAY PASSENGERS PER YEAR



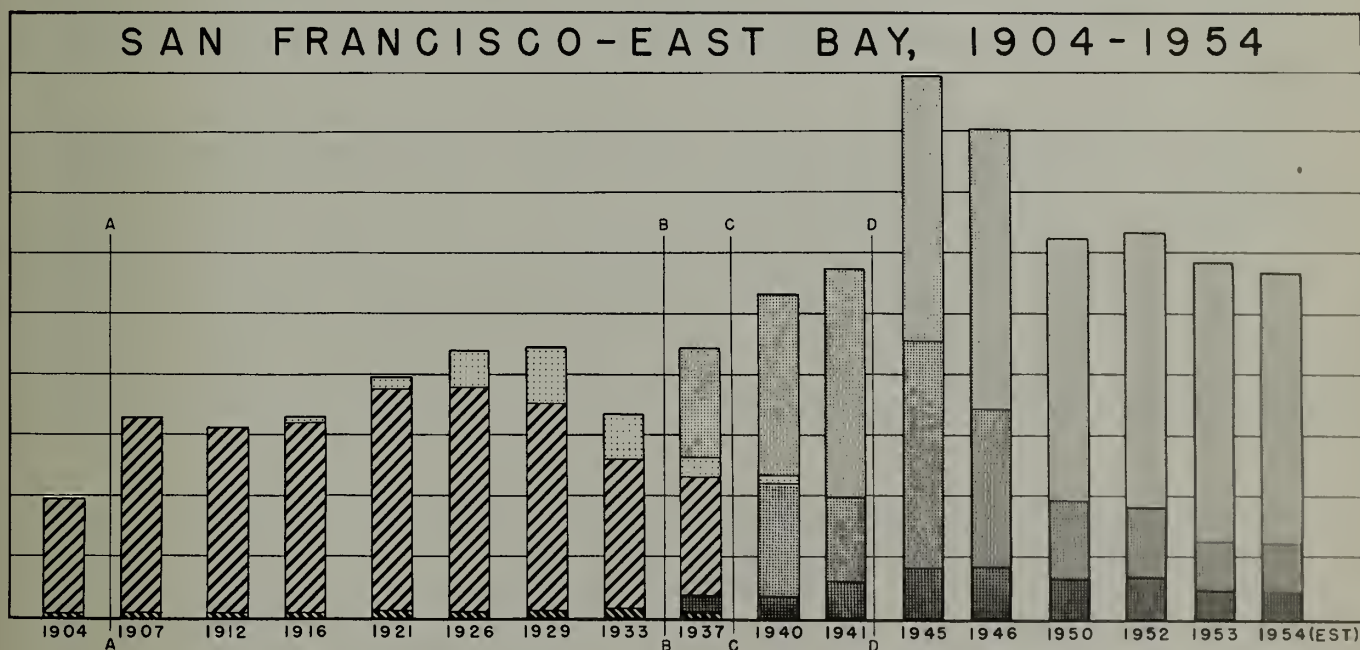
## TRIPS VIA AUTOMOBILE

CROSSING GOLDEN GATE BRIDGE  
CROSSING ON FERRIES

## TRIPS VIA PUBLIC TRANSIT

BUSES - GOLDEN GATE BRIDGE  
TRAIN-FERRY SYSTEM

B - TRAIN-FERRY SYSTEM DISCONTINUED 1939

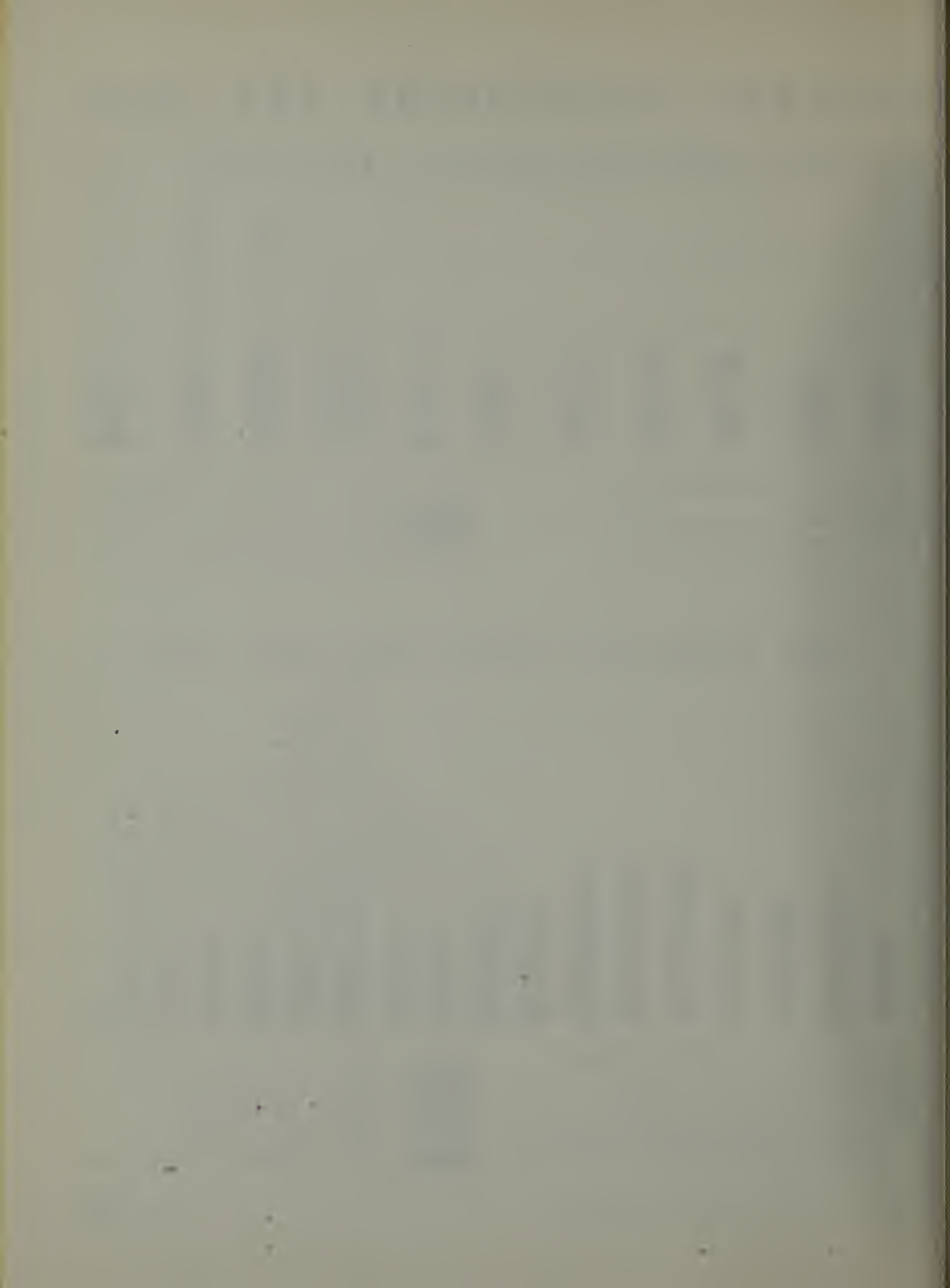


## TRIPS VIA AUTOMOBILE

CROSSING BAY BRIDGE  
CROSSING ON FERRIES

## TRIPS VIA PUBLIC TRANSIT

BUSES - BAY BRIDGE  
TRAINS - BAY BRIDGE  
TRAIN-FERRY SYSTEM  
FOOT PASSENGERS ON FERRIES



Daily Trips from East Bay Have Not Equalled Population Increases.

Total persons per typical week day from Alameda and Contra Costa Counties in 1954 was 72,300, not quite double the 40,000 entering the city from that area in 1912. During this same period, however, the population of Alameda and Contra Costa Counties has increased more than four times (1910: 277,805 persons; 1954 estimate: 1,193,100). This reflects a change in the character of the East Bay cities. Primarily dormitory towns for San Francisco commuters in 1912, the cluster of cities in the East Bay now contain employment centers of major importance in industrial plants, distributive enterprises, and institutional, scientific, and governmental centers. A considerable group of governmental and research centers have grown up in Berkeley, closely related to the University of California, itself a major employer. This growth of East Bay employment centers has reduced the proportion of the labor force that commutes to San Francisco.

The necessity for "coming to the City" for the satisfaction of many shopping and entertainment needs has likewise been reduced with the development of more complete major shopping centers, first-class restaurants and recreational facilities in the East Bay.

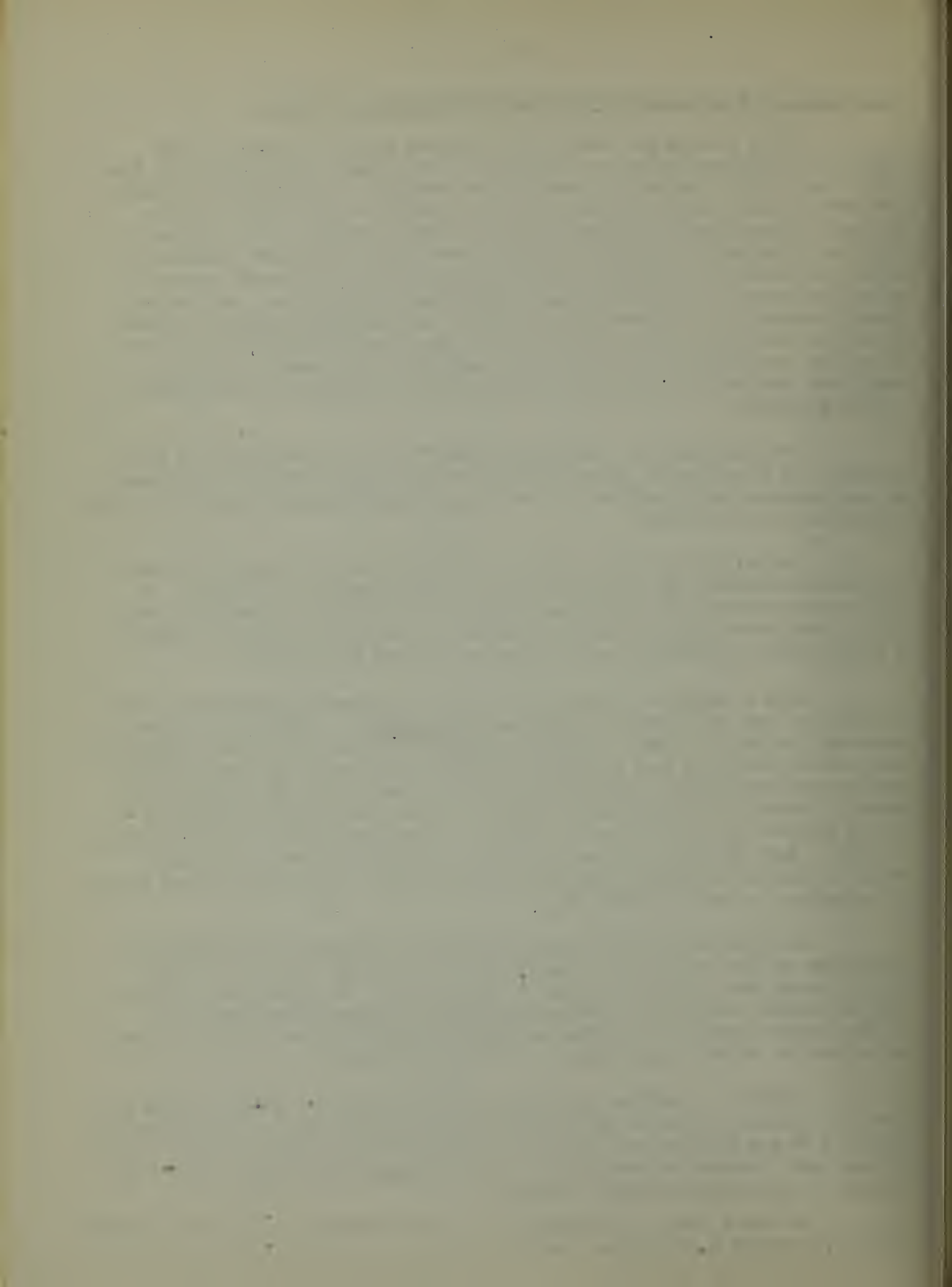
The relatively stable volumes of total passenger crossings over the San Francisco-Oakland Bay Bridge in the years since 1946 are noteworthy. In 1946 at various hearings concerning necessity for a second trans-bay toll crossing, great increases in traffic and passenger volumes were predicted, giving a strong sense of urgency as to the need for a second bay crossing.

From a "high" of 80,428,000 Bay Bridge passenger crossings per year in 1946 (via auto and transit), volume has decreased to 55,782,264 passenger crossings per year in 1954. Transit crossings in 1954 were about 12,000,000, or almost two-thirds less than the 31,530,000 carried in 1946. Automobile passengers and drivers in 1946 (48,898,000) were also less in 1954 (44,738,468) and showed no increases representing a shift of transit riders to automobile use (as is indicated in San Francisco trips into downtown districts in 1954 compared to 1947). Auto drivers and passengers had a low annual Bay Bridge crossing volume in 1950 of 43,134,010, and were somewhat higher in 1953 with annual passenger crossings by auto of 46,733,502,

A comparison of daily volumes of persons crossing the Bay Bridge in 1947 (from the Bay Area Metropolitan Traffic Survey data) and the 1954 rapid transit survey data indicate a slight decrease, also. The 80,295 total daily 1947 Bay Bridge trips with San Francisco destinations was greater than the 77,112 persons using the Bay Bridge in 1954 for trips into San Francisco. (These counts are not exactly comparable, but indicate the trend).

Capacity of existing Bay Bridge traffic lanes, particularly during peak periods, is seen as a factor limiting trans-bay travel by many traffic engineers. Between 5 PM and 6 PM the auto lanes of the bridge are literally at full capacity and any minor accident or disabled car causes stoppages and delays. These conditions act as trans-bay travel deterrents.

Increased fares and decreases in schedule frequency on trans-bay transit routes have tended to discourage transit travel.





### Marin and Peninsula: Daily Trips have increased with Population

The 7,600 persons coming to San Francisco each week day in 1907 from Marin County and North Bay points have increased to 28,800 in 1954, (including transit and auto passengers and drivers), an increase of almost four times. This parallels Marin County's population growth, which in 1910 was 25,114, and is estimated in 1954 to have been 100,700.

Peninsula daily trips into San Francisco appeared to be of minor importance in 1912, as only 2,692 can be found in data from tables in Bion Arnold's pioneer transportation report in 1913 (not including street-car passengers on the San Mateo Interurban Line). Even if the figure was closer to 5,000 persons entering per day, the current figure of 81,500 persons entering in 1954 shows a growth commensurate with the tremendous population growth of the Peninsula from 1912 to 1954.

A steady growth in volume of commuters has also been shown using Southern Pacific trains and Pacific Greyhound buses (about 20,000 in 1954). Since 1920, rail commuters have almost tripled from 5,680 to 14,612 in 1950 (estimated to be well over 15,000 in 1954.) Interestingly enough, however, ratio of rail commuters to total population of cities served by the railway has declined from 7.07 per cent in 1920 to 4.39 per cent in 1950.<sup>18</sup> This would substantiate Professor Foley's findings that the larger the metropolitan area, the smaller the per cent of the total metropolitan population that goes to the central business district of the core city.<sup>19</sup>

### Decline of Suburban Transit in the Bay Area

The consulting engineers of the San Francisco Bay Area Rapid Transit Commission, Parsons, Brinckerhoff, Hall, and Macdonald, are now studying the whole rapid transit passenger potential, present and future, of the nine-county area surrounding San Francisco Bay, including causes of the decline of suburban transit lines patronage mentioned frequently in the pages above.

Part of this decline is no doubt part of the country-wide general decline in urban and suburban transit patronage experienced in all metropolitan areas in the United States and Canada. This is probably closely related to greatly increased numbers of private automobiles, particularly since 1946, and their increased use.

Part of the Bay Area's suburban transit decline is associated with the opening of the two trans-bay bridges in the late 1930's, giving much faster and more convenient access by private automobile to San Francisco from North Bay and East Bay points at greatly reduced tolls. Transit facilities established on the bridges to succeed the train-ferry systems did not provide competitive and commensurate savings in time and money for those not using autos.

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<sup>18</sup> Information provided the Department of City Planning by the Operating Department, Southern Pacific Railroad, 65 Market Street, San Francisco.

<sup>19</sup> Donald Foley (See above, footnote # 5).



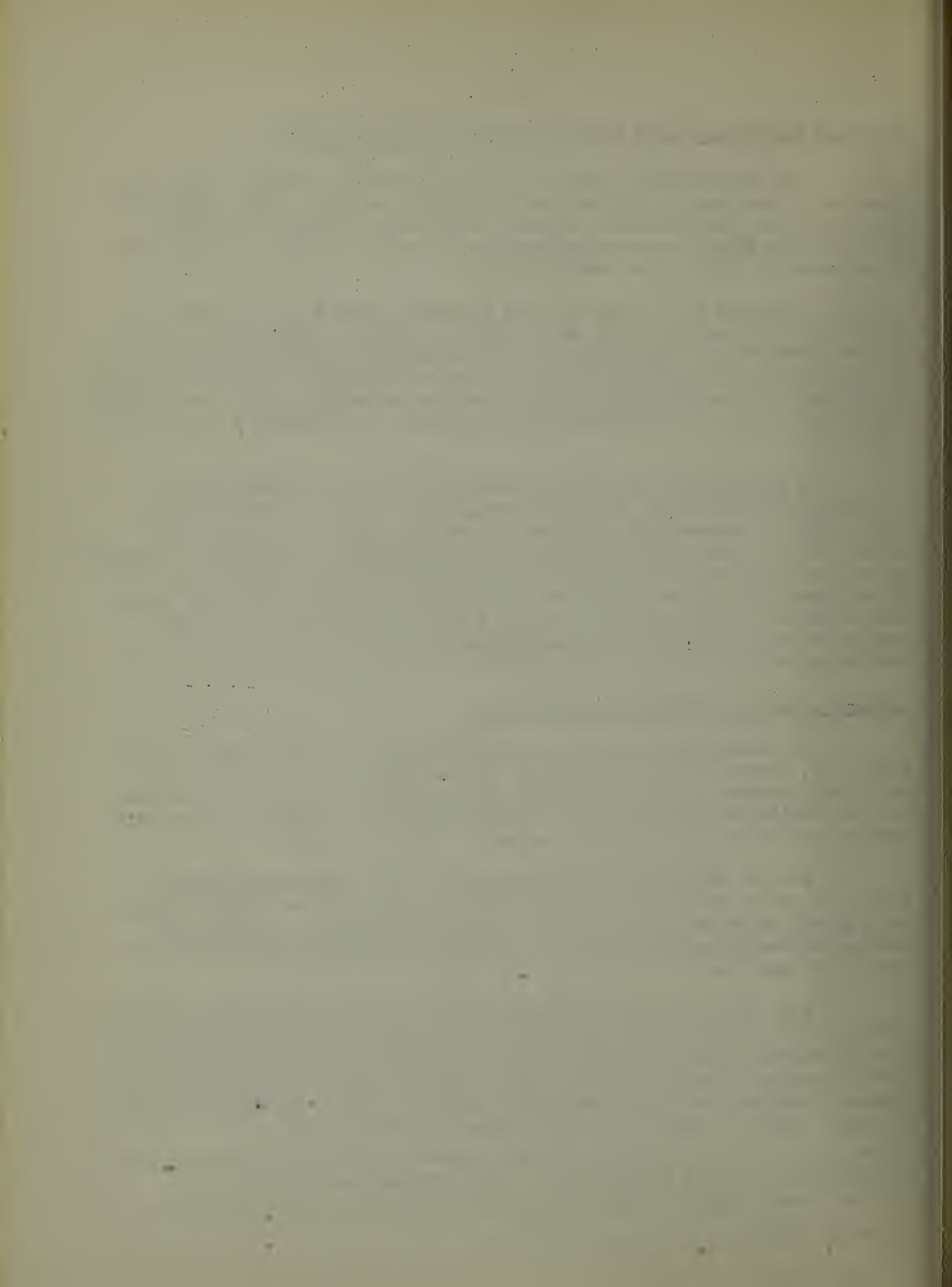


TABLE 29

ESTIMATED TOTAL DAILY WEEK DAY TRIPS  
INTO SAN FRANCISCO FROM BAY AREA POINTS  
 (1912, 1926, 1930, 1947 and 1954)

YEAR	Mode of Travel	Total Estimated Daily Trips into San Francisco	Trips From East Bay	Trips From Marin and North Bay	Trips From Peninsula
1912 <sup>a</sup>	Trains and Ferries	50,541	40,240	7,609	2,692
1926 <sup>b</sup>	<u>Total</u>	<u>76,746</u>	<u>49,188</u>	<u>8,671</u>	<u>18,887</u>
	Autos & Auto Ferries	15,923	2,915	898	12,110
	Trains & Ferries	60,823	46,273	7,773	6,777
1930 <sup>c</sup>	<u>Total</u>	<u>92,140</u>	<u>54,090</u>	<u>10,679</u>	<u>27,371</u>
(24 hrs)	Autos & Auto Ferries	28,588	7,109	3,479	18,000
	Trains & Ferries	63,552	46,981	7,200	9,371
1947 <sup>d</sup>	<u>Total</u>	<u>123,474</u>	<u>72,222</u>	<u>15,284</u>	<u>35,968</u>
(7am-7pm)	Autos	61,065	35,436	8,812	17,817
(12 hrs)	Trains & Buses	62,409	36,786	6,472	19,151
1954 <sup>e</sup>	<u>Total</u>	<u>182,746</u>	<u>72,340</u>	<u>28,844</u>	<u>81,562</u>
(24 hrs)	Autos	135,765	51,688	22,660	61,417
	Trains & Buses	46,981	20,652	6,184	20,145

- Sources:
- a. Bion Arnold. Report on Transportation Facilities of San Francisco. 1913.
  - b. Miller McClintock. The City-Wide Traffic Control Problem of San Francisco. 1926
  - c. Golden Gate Bridge and Highway District, Report of the Traffic Engineer. 1935. Also: Report of the Hoover-Young San Francisco Bay Bridge Commission. 1930 (Also: Data supplied by the Southern Pacific Railroad).
  - d. Data from tabulations of the Bay Area Metropolitan Traffic Survey. District Office IV of the California State Division of Highways. San Francisco. June 1949.
  - e. Data from the Bay Area Rapid Transit Survey, San Francisco Bay Area Rapid Transit Commission (Parsons, Brinkerhoff, Hall and Macdonald, consulting engineers -- preliminary data).



TABLE 30

SAN FRANCISCO TO EAST BAY POINTS  
TOTAL PASSENGERS CROSSING THE BAY  
 (Annual, 1904 - 1954)

YEAR	Total Passenger Crossings	Foot Passengers on Ferries	Passengers on Train-Ferry System	Passengers on Trains on Bay Bridge	Passengers on Buses on Bay Bridge	Passengers in Autos on Ferries	Passengers in Autos on Bay Bridge
1904	19,700,000 <sup>a</sup>	700,000	19,000,000				
1907	33,000,000 <sup>a</sup>	800,000	32,200,000				
1912	31,200,000 <sup>a</sup>	900,000	30,300,000				
1916	33,217,186 <sup>b</sup>	754,000	31,583,625			879,561	
1921	39,844,437 <sup>b</sup>	1,006,000	37,026,390			1,812,047	
1926	44,030,115 <sup>b</sup>	879,040	37,323,445			5,827,630	
1929	44,672,271 <sup>b</sup>	912,487	34,498,243			9,271,541	
1933	33,616,182 <sup>b</sup>	1,404,725	24,815,550			7,395,907	
1937	44,380,149 <sup>b</sup>	199,800	22,516,831		460,136	3,000,400	18,142,982
1940	53,413,688 <sup>b</sup>			18,466,666	3,503,281		30,186,352
1941	57,404,154 <sup>b</sup>			14,050,458	5,802,532		37,551,164
1945	89,474,100 <sup>c</sup>			37,334,077	8,457,035		37,334,077
1946	80,428,000 <sup>c</sup>			22,177,000	9,353,000		48,898,000
1950	61,425,143 <sup>d</sup>			11,811,795	6,479,338		43,134,010
1952	61,933,581 <sup>d</sup>			9,757,468	6,735,545		45,440,568
1953	57,947,543 <sup>d</sup>			6,604,790	4,609,251		46,733,502
1954 (Est.)	55,782,264 <sup>d</sup>			6,484,194	4,559,602		44,738,468

SOURCES: a. Bion Arnold. Report on Transportation Facilities of San Francisco. 1913.

b. California Department of Public Works. Report ... for an Additional Bridge Between San Francisco and the East Bay Metropolitan Area. January 31, 1947, Table III - 4.

c. California Department of Public Works, Division of San Francisco Bay Toll Crossings. Report to the Department of Public Works on Additional Toll Crossings of San Francisco Bay. Ralph Tudor, Chief Engineer, November, 1948.

d. California State Toll Bridge Authority, Monthly Reports. (Automobile passengers estimated on basis of ratio of 1.7 persons per passenger automobile).





SAN FRANCISCO TO MARIN COUNTY  
TOTAL PASSENGERS CROSSING THE GOLDEN GATE

(Annual, 1908 - 1953)

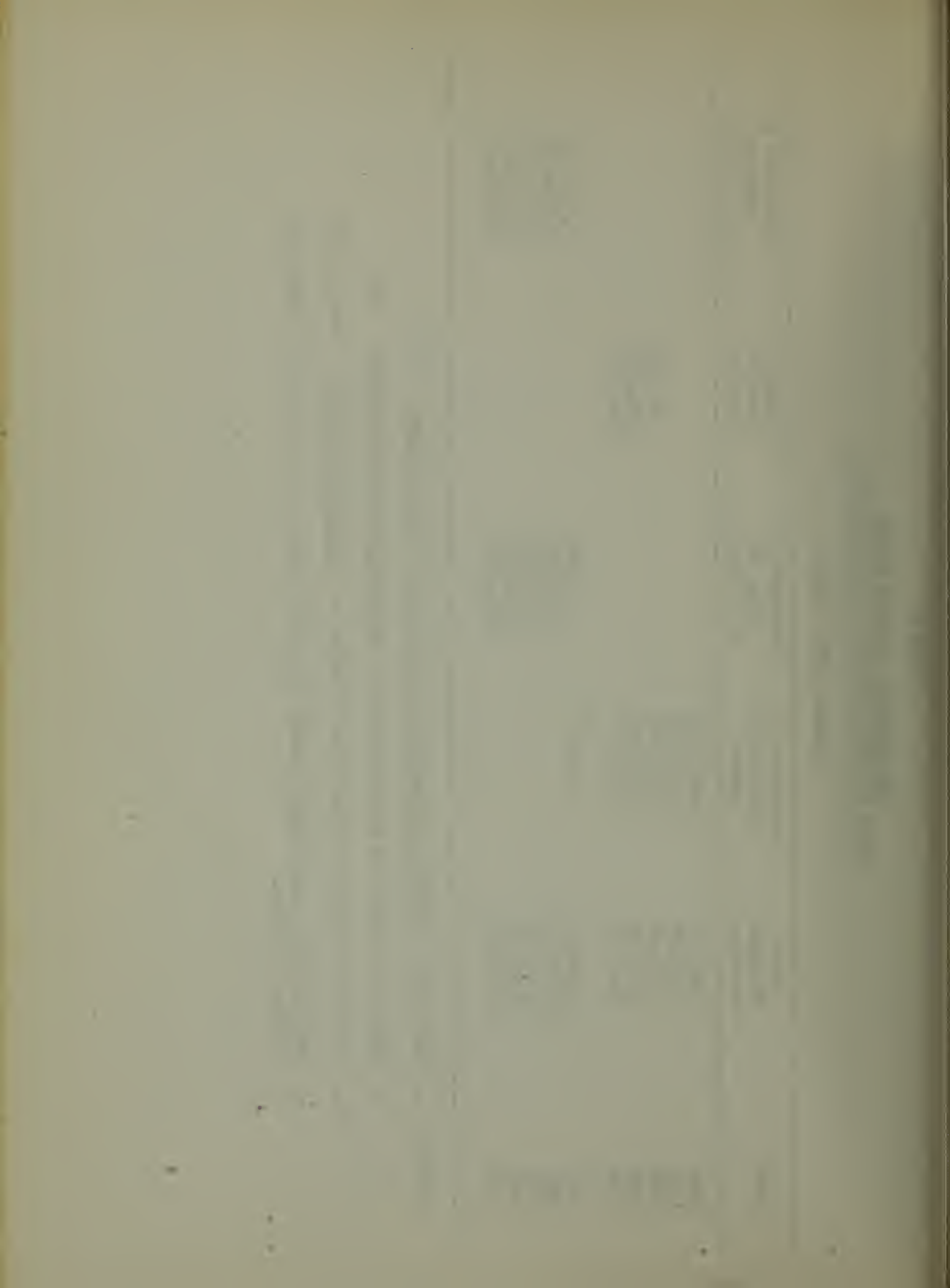
YEAR	Total Passenger Crossings	Passengers via Train-Ferry System	Passengers in Buses on G. G. Bridge	Passengers in Autos on Ferries	Passengers in Autos on G. G. Bridge
1908	5,800,000	5,800,000 <sup>a</sup>			
1912	7,609,000	7,609,000 <sup>a</sup>			
1920	7,731,686	7,231,686 <sup>b</sup>		500,000 <sup>b</sup>	
1929	8,577,024	6,784,467 <sup>b</sup>		1,792,557 <sup>b</sup>	
1934	7,041,825	5,243,325		1,798,500	
1938	9,698,879	4,235,893 <sup>c</sup>	392,260 <sup>c</sup>		5,070,726 <sup>d</sup>
1945	13,508,536		6,908,478 <sup>d</sup>		6,600,058 <sup>d</sup>
1947	18,467,217		7,324,603 <sup>d</sup>		11,142,614 <sup>d</sup>
1950	18,224,820		4,194,920 <sup>d</sup>		14,029,900 <sup>d</sup>
1953	22,558,910		4,786,180 <sup>d</sup>		17,772,730 <sup>d</sup>

SOURCES: a. Bion Arnold. Report on Transportation Facilities of San Francisco. 1913.

b. Golden Gate Bridge and Highway District. Report of the Traffic Engineer. 1935.

c. San Francisco Bay Area Rapid Transit Commission. Preliminary Report. January, 1953.

d. Estimated from annual vehicle counts in annual reports of the Golden Gate Bridge and Highway District.

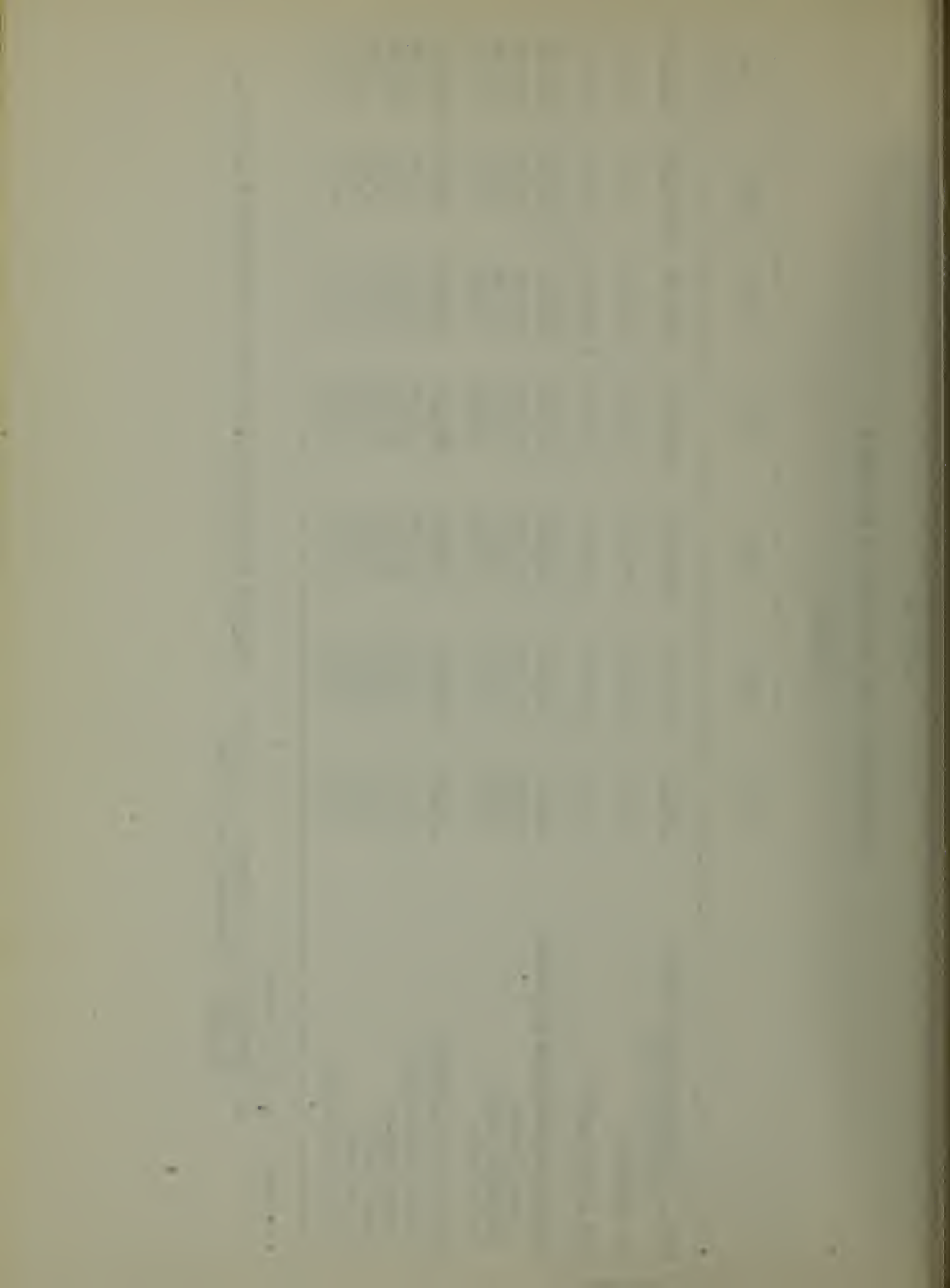


POPULATION OF THE SAN FRANCISCO BAY REGION1900-1950

	1900 <sup>a</sup>	1910 <sup>a</sup>	1920 <sup>a</sup>	1930 <sup>a</sup>	1940 <sup>a</sup>	1950 <sup>a</sup>	1954 <sup>b</sup> Estimate
<u>TOTAL, SAN FRANCISCO BAY REGION</u> (9-county area)	<u>658,111</u>	<u>925,708</u>	<u>1,182,911</u>	<u>1,578,009</u>	<u>1,734,301</u>	<u>2,681,322</u>	<u>3,052,000</u>
SAN FRANCISCO	342,782	416,912	506,676	634,394	634,536	775,357	785,900
REST OF BAY REGION	315,329	508,796	676,235	943,615	1,099,765	1,905,965	2,266,100
<u>Counties Bordering San Francisco</u>	<u>157,993</u>	<u>297,830</u>	<u>408,300</u>	<u>593,936</u>	<u>677,693</u>	<u>1,061,593</u>	<u>1,261,500</u>
Alameda County	130,197	246,131	344,177	474,883	513,011	740,315	838,900
San Mateo County	12,094	26,585	36,781	77,405	111,782	235,659	321,900
Marin County	15,702	25,114	27,342	41,648	52,900	85,619	100,700
<u>Outer Bay Area Counties</u>	<u>157,336</u>	<u>210,966</u>	<u>267,935</u>	<u>349,679</u>	<u>422,072</u>	<u>844,372</u>	<u>1,004,600</u>
Contra Costa County	18,046	31,674	53,889	78,608	100,450	298,984	335,200
Solano County	24,143	27,559	40,602	40,834	49,118	104,833	117,800
Napa County	16,451	19,800	20,678	22,897	28,503	46,603	56,700
Sonoma County	38,480	48,394	52,090	62,222	69,052	103,405	121,700
Santa Clara County	60,216	83,539	100,676	145,118	174,949	290,547	373,200

SOURCES: a. U. S. Census

b. California State Department of Finance. Estimated Population of California 1950-1954 With Projections to 1965. Sacramento, July, 1954.



Millions of dollars were spent by the California State Toll Bridge Authority to provide rail facilities over the San Francisco-Oakland Bay Bridge, a rail terminal in San Francisco, and storage yard facilities on the East Bay side of the bridge. Automatic train control signal installations on tracks and trains were also financed by the Authority. The rail companies, however, spent little to improve rights-of-way of lines in the East Bay, and shortly after the bridge opened, one of the carriers (the Southern Pacific's Interurban Electric system) abandoned operations, which has resulted in a loss of private interurban right-of-way over which highspeed operations might have been possible.

Successor operations ("willed" to the Key System in an action of the State Public Utilities Commission) were undertaken by trains on tracks in city streets, or by trans-bay bus routes operating over city streets, both subject to delays of traffic congestion and normal street traffic movements and controls.

Although Pacific Greyhound bus service, successor to the Northwestern Pacific train-ferry system abandoned in 1939, provided at first some time advantages over the service of its predecessor, commute tickets were immediately raised to much higher rates. This encouraged automobile commuting over the bridge, which increased traffic congestion on the approaches, which in turn slowed down the buses! Traffic congestion on San Francisco city streets leading to the Golden Gate Bridge has tended to offset some of the time advantage originally experienced in the substitution of buses for the old train-ferry system.

The stability of the Peninsula transit patronage since 1947, and slight increase in that of the Southern Pacific rail lines, is significant, inasmuch as this system has been able to preserve high-speed operations over privately-owned right-of-way, and commuting time via train to many points is superior to that which can be achieved by auto on the crowded trunk highways paralleling the rail line.

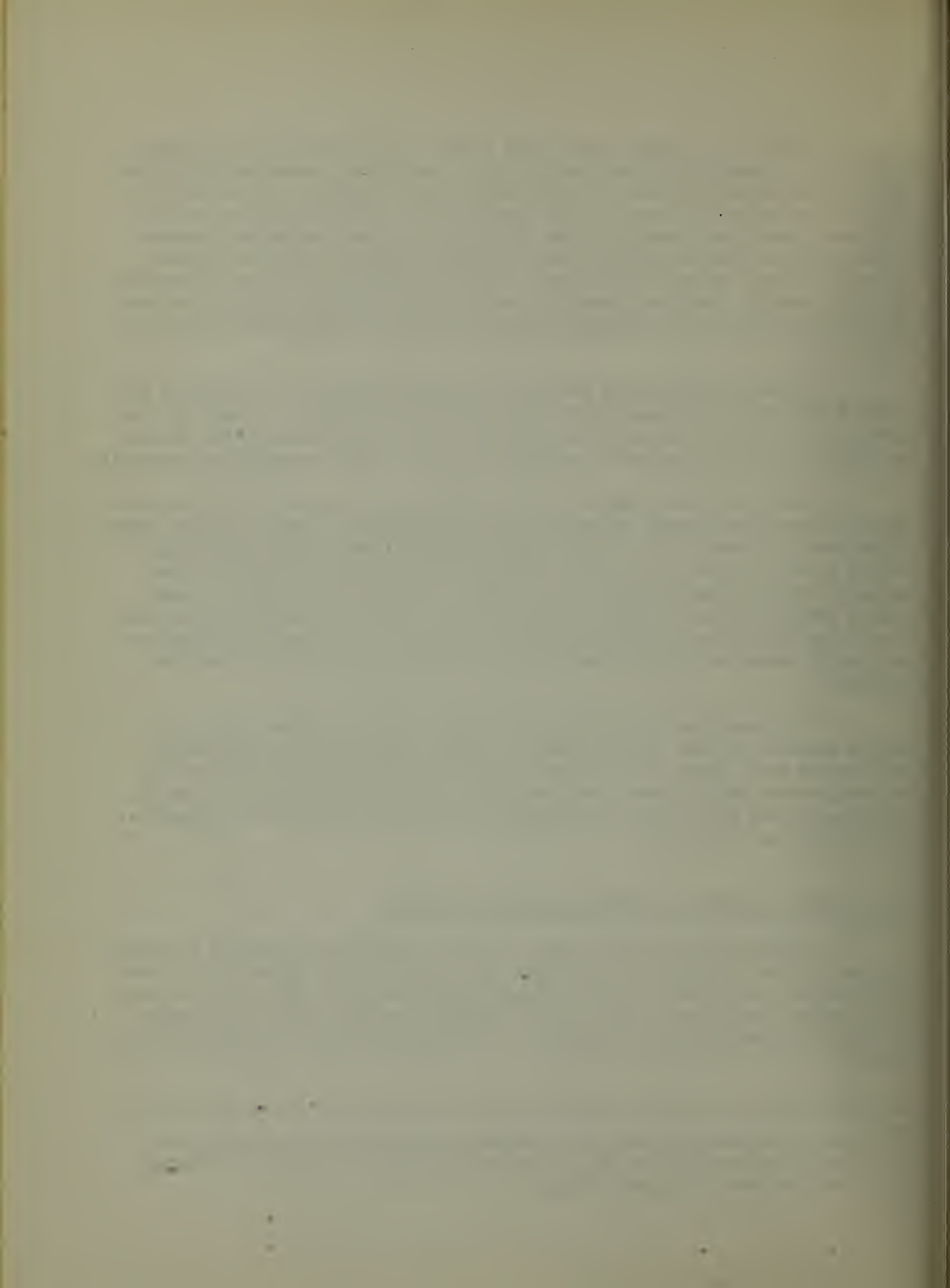
#### Use of Trains and Buses in Suburban Journeys to Work

Approximately 245,000 persons entered boundaries of the San Francisco-Oakland Metropolitan Area every 24 hours on a typical week day in 1954, it was found in the San Francisco Bay Area Rapid Transit Study.<sup>20</sup> This area includes San Francisco, Daly City, Colma, and the 10 East Bay cities that were within the limits of the intensive study zone of the 1947 Bay Area Metropolitan Traffic Survey.

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<sup>20</sup> Parsons, Brinckerhoff, Hall and Macdonald, consulting engineers for the San Francisco Bay Area Rapid Transit Commission. "Summary of Progress for the Month of August, 1954."





Of this group, only 12.8 per cent came in on public transit vehicles, as is shown below:

PERSONS ENTERING SAN FRANCISCO-OAKLAND METROPOLITAN AREA.

Typical Week Day - 1954

Gateways to San Francisco-Oakland Metropolitan Area (SF & 10 East Bay Cities)	Persons Entering Area on a Typical <sup>21</sup> Week Day in 1954 (24 hour period)			
	Total	Via Auto	Via Transit	Per Cent by Transit
Marin Gateway (Golden Gate Bridge)	28,800	23,000	5,800	20.1%
Peninsula Gateways (Bayshore, El Camino, Skyline, etc., & S.P.R.R. near SF County Line)	86,200	65,700	20,500	23.8%
East Bay (North) Gateway (U.S. 40, San Pablo)	25,700	24,700	1,000	3.9%
East Bay (East) Gateway (Highway 24, East of Tunnel)	27,400	25,700	1,700	6.2%
East Bay (South) Gateways (South of San Leandro City Limits)	<u>78,300</u>	<u>75,700</u>	<u>2,600</u>	<u>3.3%</u>
Total Entering S. F. - Oakland Metropolitan Area, 24 hours	246,400	214,800	31,600	12.8%

This low proportion of transit riders does not give a representative picture of existing transit riding in the metropolitan area; the East Bay cordon lines' location was, in most cases, beyond the termini of heavily-travelled local and interurban bus and car lines, and these outer cordon entrances data do not include persons travelling over the San Francisco-Oakland Bay Bridge, where transit passengers amounted to 27 per cent of the total. Within the metropolitan cordon area the proportion of transit riders was probably at least 20 per cent of the total.

Heavy automobile commuting movements from residential areas just outside the East Bay cordon lines to industrial plant locations just inside the line (and vice versa) also contributed to the high private automobile passenger movement ratio, the consultants have indicated.

<sup>21</sup> See Note 20.



Interurban travel by transit tended to be a larger proportion of total daily travel, it was found in the 1954 survey:

- (1) For destinations closer to congested central areas;
- (2) For trips to work destinations as compared with trips for shopping, recreation, and other purposes;
- (3) For trips undertaken during peak periods compared with those tallied at the middle of the day or during evening hours;
- (4) For journeys to work from areas served by established existing transit facilities that provide fast or frequent service that compete favorably with trips by private auto in speed, comfort or cost.

#### Most Suburban Transit Riders Come into San Francisco's Downtown Districts

Into San Francisco's central commercial and industrial areas come most suburban transit-riders bound for the city from Bay Area points (83.6 per cent). Less than half of the suburban auto trips into the city (46.9 per cent), however, had destinations there (Sector "01" of the 1954 Survey--the Metropolitan Traffic District plus the Downtown Residential Community Area -- See Chart 10). The expanded M.T.D. accounted for destinations of 71.0 per cent of all suburban trips into the city.

To the southeastern sector ("02") came 14.2 per cent of the total, but its share of suburban auto riders (16.9 per cent) was much higher than its share of suburban transit riders (6.4 per cent).

Sector 03 in San Francisco of the 1954 survey (residential areas west of Van Ness Avenue, and roughly west of John McLaren Park) was the destination of a little less than one-third (29.5 per cent) of all daily trips from Bay Area points. A considerably higher proportion of auto drivers and passengers coming into the city went to these residential areas, however (36.2 per cent), as compared with suburban transit riders (10.0 per cent).

Commuter or work-destination trips into the city constituted almost eight-tenths of all transit trips into the city (78.0 per cent). Of all those entering the city by private automobile, however, less than half (46.3 per cent) were commuters or persons going to work destinations, the balance being persons on shopping, medical, recreational, or other errands.

The work destination trips by transit constituted almost exclusively a movement to San Francisco's Sector 01, the expanded Metropolitan Traffic District (89.5 per cent). Only 5.6 per cent of suburban commuters went to jobs in the southeastern industrial districts, and 4.9 per cent had destinations in Sector 03, the residential areas.

A smaller majority of automobile commuters (60.3 per cent) went to jobs in the expanded Metropolitan Traffic District, 18.2 per cent had destinations in the southeastern industrial districts, and 21.5 per cent were bound for points in the western residential areas.





Transit riders on shopping, errand, social-recreation, and other trips showed higher percentages to the outer districts than was the case with transit commuters. To Sector 01 went 62.7% of non-work trip transit riders, to Sector 02 went 9.0 per cent, and 28.3 per cent went to Sector 03.

In automobile drivers and passengers on non-work trips (shopping, social-recreation, etc.), we find that almost half of them (48.8 per cent) had destinations in the western residential areas of Sector 03. Only 35.3 per cent went to the downtown and surrounding areas of Sector 01, and Sector 02, the southeastern industrial districts, got 15.9 per cent of the total auto trips for non-work purposes.

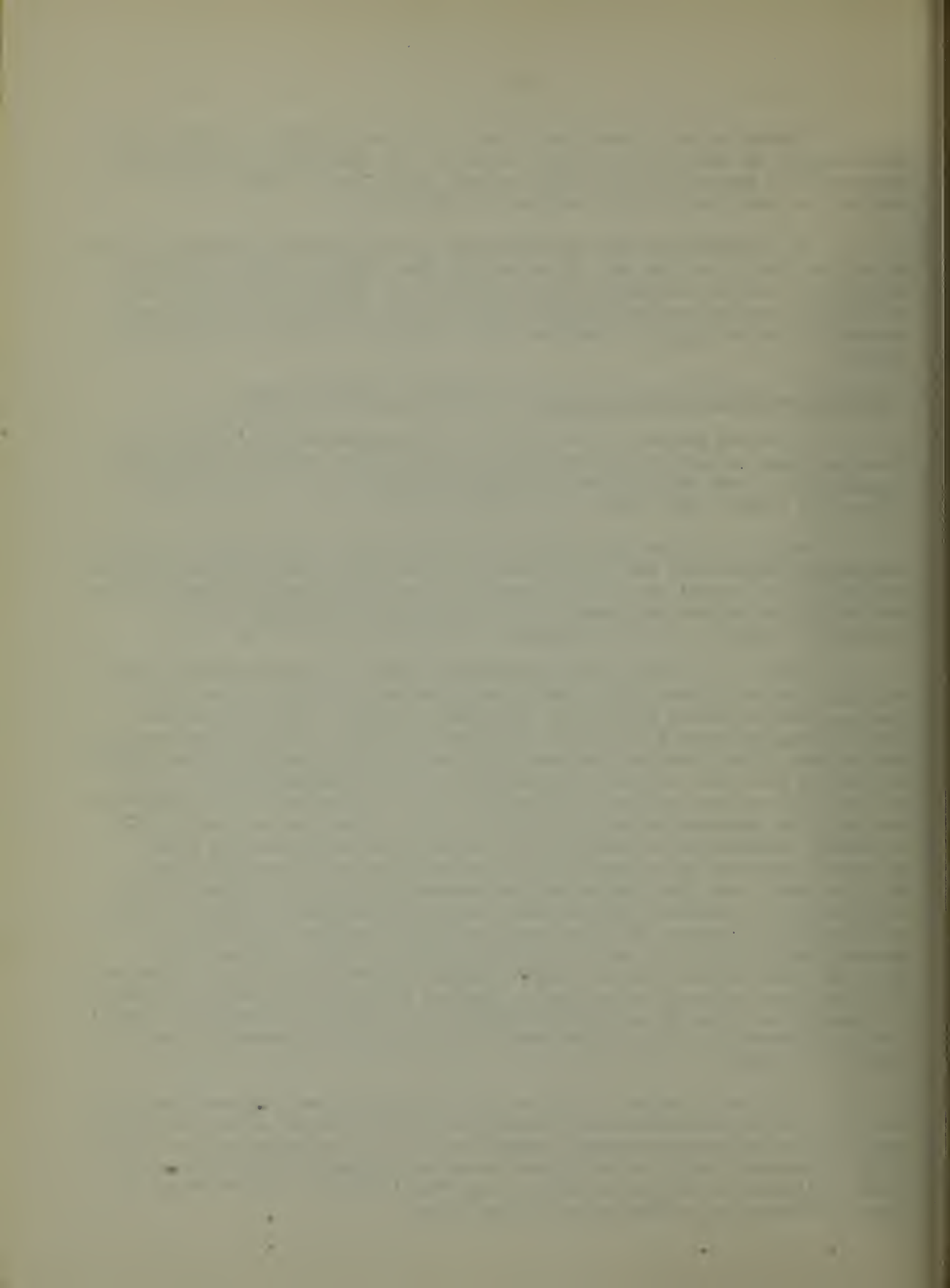
#### Pattern of San Francisco Destinations from Different Suburban Areas.

Different patterns of San Francisco destination areas were shown for Peninsula areas closest to San Francisco as compared with further-out Peninsula communities and most areas across the Golden Gate Bridge and the San Francisco-Oakland Bay Bridge. (See Tables 20, 21, 22, and 23).

Only half of the work destination trips (50.8 per cent) from the upper Peninsula (Brisbane-South San Francisco-San Bruno-Millbrae) area into San Francisco were within the central areas of the expanded Metropolitan Traffic District (Sector "01"). The balance was bound for the southeastern industrial districts (Sector "02") and the western residential districts (Sector "03").

This is in contrast with trans-bridge trips and trips from the Lower Peninsula, where, in most cases, about three-fourths of the trips were to the downtown areas of Sector "01". From the Middle Peninsula, for instance (San Carlos through Mountain View and Los Altos) 76.6 per cent of city-bound trips were to Sector "01," and from the Lower Peninsula (Sunnyvale-Santa Clara-Campbell) it was 73.3 per cent. San Jose's proportion of downtown-bound commuters (67.9 per cent) may be explained by considerable numbers of Southern Pacific employees working in the Bayshore railway yards who live in the San Jose area and commute on passes. Proportions of downtown area commuters to total commuters to San Francisco from other areas were: From the Orinda-Lafayette-Walnut Creek area, 86.5 per cent; from East Oakland and San Leandro, 79.8 per cent; from Berkeley and Albany, 76.9 per cent; from Downtown Oakland and Emeryville, 73.3 per cent; from the City of Alameda, 72.8 per cent; from outer portions of Contra Costa and Alameda Counties, 72.3 per cent; from Southern Marin County, 75.8 per cent. Richmond and El Cerrito showed a somewhat lower proportion of downtown commuters (67.5 per cent) which may be partially explained by continued presence in Richmond of temporary war housing projects from which it is logical to expect that labor force for industrial plants in San Francisco's southeastern industrial districts might be recruited.

This would indicate a tendency for long-distance and trans-bridge daily work trips to be aimed more largely towards the city's central areas, and trips from close-in "across-the-border" communities to be to employment centers located in San Francisco's outer areas. (Typical examples: Brisbane to the Schlage Lock Plant in Visitation Valley; San Bruno to San Francisco State College near Lake Merced; Millbrae to the Stonestown Shopping Center).



Choice of Transit or Auto for Suburban Commute Trips Reflects Service Available.

The part of the Peninsula closest to San Francisco also showed a different pattern in use of autos compared with use of suburban trains and buses. Over three-fourths of commuters to San Francisco's downtown Sector "01" from the Brisbane-South San Francisco-San Bruno-Millbrae area used private automobiles in their daily journey to work. From the Burlingame-San Mateo-Belmont area, however, 50 per cent of the commuters used Southern Pacific trains and Greyhound buses. Further south, we find that from 63.6 per cent to 73.3 per cent of commuters from communities south of Belmont used trains and buses in their daily work trips to San Francisco's downtown areas.

High usage of Peninsula trains and buses from southern Peninsula points may be partially explained by these factors:

(1) Cost Advantage: In many downtown areas, monthly cost of off-street parking exceeds the cost of monthly commute tickets on train or bus. Gasoline, oil, and other per-mile costs for a daily round trip of from 40 to 60 miles would also greatly exceed costs of commute tickets. Only through car-pools could rail or bus fares be equalled or bettered, and the 1954 rapid transit survey consultants found little evidence of wide-spread use of car-pooling arrangements.

(2) Time Advantage: To points from Burlingame south, the Southern Pacific operates fleets of fast peak-hour commute trains. The 32 miles from Third and Townsend Depot to South Palo Alto, for instance, is reached in 40 minutes. This trip takes, in peak hours, at least 55 minutes to drive by auto, even with improved traffic conditions resulting from opening of new stretches of freeway on the Bayshore route. Greyhound also operates express buses to Broadway, Belmont, and Redwood City, utilizing the freeway, making speeds as fast as those typical of private automobiles.

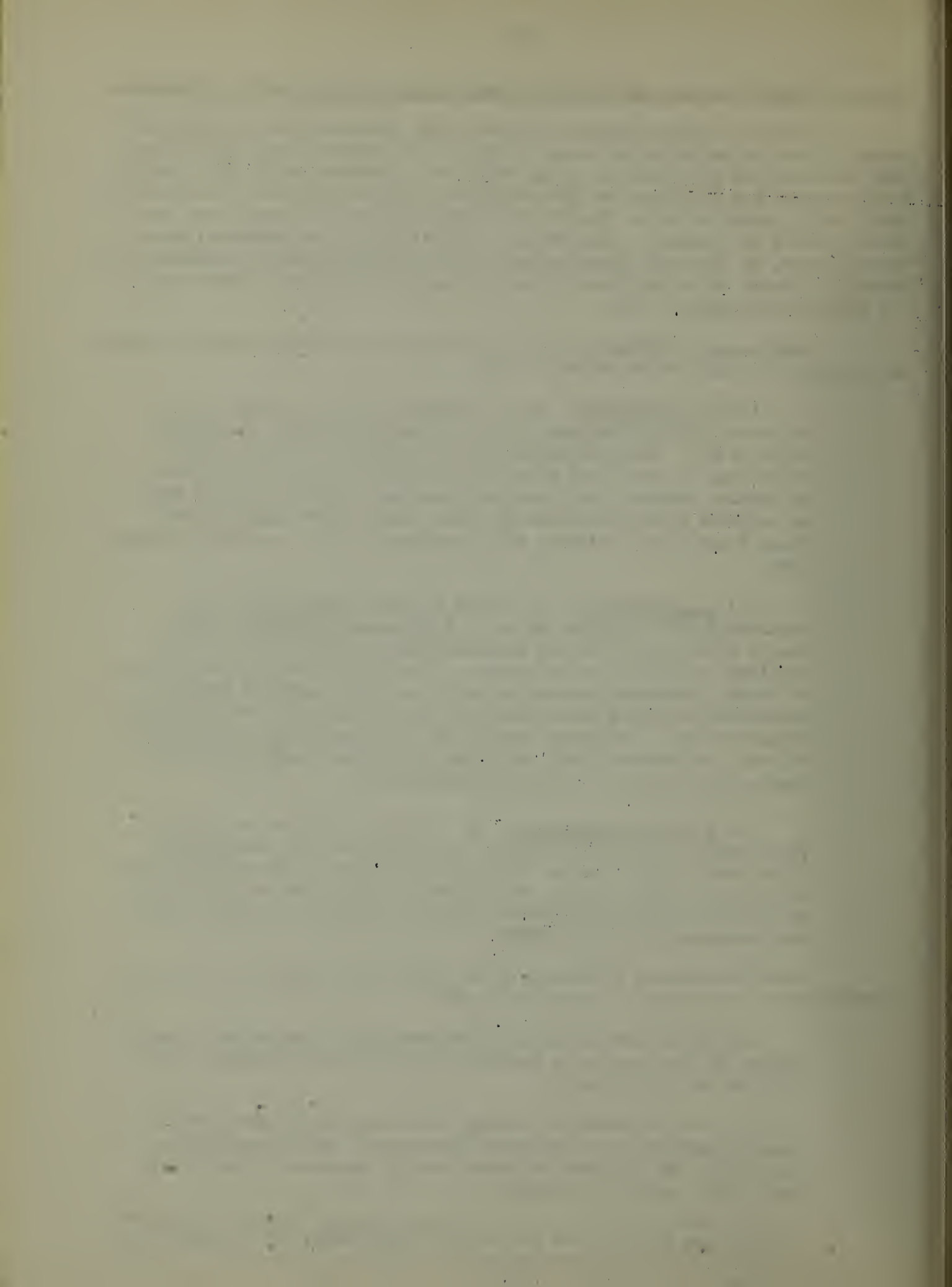
(3) Relaxation Advantage: On a train or bus, one can sleep, play bridge, chat with neighbors, or contemplate the countryside. In an auto, in peak hours, "flying in formation" in three full lanes of freeway traffic, driver and passengers alike tend to concentrate on traffic hazards, which makes trips of over 15 or 20 miles tiring and consuming of nervous energy.

From the northern Peninsula, on the other hand, higher use of private automobiles could probably be accounted for by:

(1) Higher proportion of "across-the-line" type trips (even to Sector 01) inconveniently served in the location of downtown terminals and suburban depots;

(2) Less advantageous express schedules; The Southern Pacific commute expresses favor Broadway, Burlingame, and the stations to the south. The Bayshore Greyhound commute expresses likewise have their first stops at Broadway.

(3) Shorter drives on the freeway--possibly bringing time spent in the heavy traffic down to a short enough period to be within the average person's "daily tolerance."





On trans-bridge travel, it can be noticed that higher use of transit occurs from suburban communities originally served by the train-ferry systems that operated in Southern Marin County and Alameda County. For instance, 46.7 per cent of Southern Marin County commuters to San Francisco's downtown areas came via Pacific Greyhound buses, while from Northern Marin County and Sonoma County it was less (43.2 per cent), while from Napa and Solano Counties it was considerably less (29.2 per cent).

The area of the ten East Bay cities (Richmond through San Leandro) showed 45.1 per cent of commuters to San Francisco's downtown districts came by trans-bay train or bus, while only 32.3 per cent of commuters from outer portions of Alameda and Contra Costa Counties came by public transit (Orinda-Lafayette-Walnut Creek sector was an exception; here, 40.7 per cent came by bus). Highest proportion of transit commuters from a community across the Bay was from the City of Alameda, (51.5 per cent), while the Berkeley-Albany area (48.3 per cent), and the Oakland-Emeryville area (45.5 per cent) showed proportions higher than the East Bay average. From East Oakland and San Leandro bus patronage accounted for 43.3 per cent of the commuters to San Francisco's downtown districts.

On the San Francisco-Oakland Bay Bridge, some time advantages have accrued to transit commuters because of frequent congestion or stalling of traffic on the upper deck used exclusively for passenger automobiles, and which is used in peak hours right up to (and perhaps exceeding) its capacity. Where buses are routed on freeways, they have no advantage or disadvantage over private automobiles, being subject to the same conditions allowing high speed or conditions of congestion arising from excessive traffic volumes.

Lower percentages of transit use from outer areas probably reflect the new conditions of subdivision and settlement where adequate commute bus schedules have not yet been fully established, and where newcomers to the area have not yet had time to develop a transit-commuter habit, such as has been traditional for persons living within the areas formerly served by the train-ferry system.

Cost advantages are not as strikingly in favor of public transit for daily commuting for the trans-bay and Marin routes, since per-mile rates are somewhat higher than to Peninsula points, and commute ticket per-trip reductions are less advantageous. Widely-publicized transbay fare increases have probably had adverse effect in carriers' public relations, having a definite effect on patronage losses on transbay lines.

Off-street parking facilities at suburban stations are not as plentiful for East Bay routes (in some cases they are non-existent) as is the case for Peninsula patrons of the Southern Pacific railway. Recently the Key System established a parking lot for trans-bay train patrons at 40th and San Pablo Avenue in Oakland, but for a suburban commuter, it is necessary to traverse considerable city traffic to reach the parking lot. Success of "Park-Ride" schemes in St. Louis and in the Shaker Heights rapid transit line in Cleveland indicates that parking lots at outlying transit stations, free to patrons, might have a beneficial effect in increasing the proportion of trans-bay commuters using public transit.



CHAPTER I  
THE HISTORY OF THE  
CITY OF BOSTON  
FROM THE FIRST SETTLEMENT  
TO THE PRESENT TIME

THE CITY OF BOSTON  
WAS FIRST SETTLED  
IN THE YEAR 1630  
BY A COMPANY OF  
PURITANS  
WHO WENT TO  
AMERICA IN  
SHIPS CALLED  
THE ARCADE  
AND THE  
WINDMILL

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PROPORTION OF SUBURBAN COMMUTE AND WORK TRIPS  
COMING TO SAN FRANCISCO'S CENTRAL AREA - 1954

(Typical Week Day, Spring, 1954)

Preliminary Data From: San Francisco Bay Area Rapid Transit Survey  
Parsons, Brinckerhoff, Hall, and Macdonald, Consultants

Suburban Area of Origin of Commute and Work Trips into San Francisco	Total Commute and Work Trips into San Francisco	Trips into Sector 01, Downtown & Surround- ing Districts	Trips into Sector 02 (SE Industrial) and Sector 03 (W. Resi- dential District)	Per Cent Total Work Trips into Downtown
Total Suburban Commute and Work Trips into San Francisco, Typical Week Day, Spring, 1954	<u>99,458</u>	<u>70,672</u>	<u>28,786</u>	<u>71.1%</u>
I. <u>Total From Alameda and Contra Costa Counties</u>	<u>39,851</u>	<u>30,338</u>	<u>9,513</u>	<u>76.1%</u>
1. <u>From 10 East Bay Cities</u> (Richmond - San Leandro)	<u>34,174</u>	<u>25,904</u>	<u>8,270</u>	<u>75.8%</u>
a. Downtown Oakland, Emeryville	7,338	5,379	1,959	73.3%
b. Richmond, El Cerrito	3,703	2,498	1,205	67.5%
c. Berkeley, Albany	8,757	6,737	2,020	76.9%
d. East Oakland, San Leandro, Piedmont	11,798	9,413	2,385	79.8%
e. City of Alameda	2,578	1,877	701	72.8%
2. <u>From Outer Portions of Alameda and Contra Costa Counties</u>	<u>5,677</u>	<u>4,434</u>	<u>1,243</u>	<u>78.1%</u>
a. Orinda-Lafayette-Walnut Creek	2,334	2,018	316	86.5%
b. Balance of two counties	3,343	2,416	927	72.3%
II. <u>Total From Marin, Sonoma, Napa, and Solano Counties</u>	<u>13,560</u>	<u>10,027</u>	<u>3,533</u>	<u>73.9%</u>
a. Southern Marin County	11,318	8,579	2,739	75.8%
b. Northern Marin & Sonoma Counties	1,455	969	486	66.6%
c. Napa & Solano Counties	787	479	308	60.9%

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TABLE 33 (Contd)

PROPORTION OF SUBURBAN COMMUTE AND WORK TRIPS  
COMING TO SAN FRANCISCO'S CENTRAL AREA - 1954

Suburban Area of Origin of Commute and Work Trips into San Francisco	Total Commute and Work Trips into San Francisco	Trips into Sector 01, Downtown & Surround- ing Districts	Trips into Sector 02 (SE Industrial) and Sector 03 (W. Resi- dential District)	Per Cent Total Work Trips into Downtown
III. Total From Peninsula (San Mateo & Santa Clara Counties)	<u>46,047</u>	<u>30,307</u>	<u>15,740</u>	<u>65.8%</u>
a. Brisbane-Millbrae "	14,314	7,276	7,038	50.8%
b. Burlingame-Belmont	15,013	10,358	4,655	69.0%
c. San Carlos-Mt. View-Los Altos	14,252	10,920	3,332	76.6%
d. San Jose & fringes	854	580	274	67.9%
e. Sunnyvale-Santa Clara-Campbell	1,284	939	345	73.1%
f. Los Gatos & west	330	234	96	70.9%

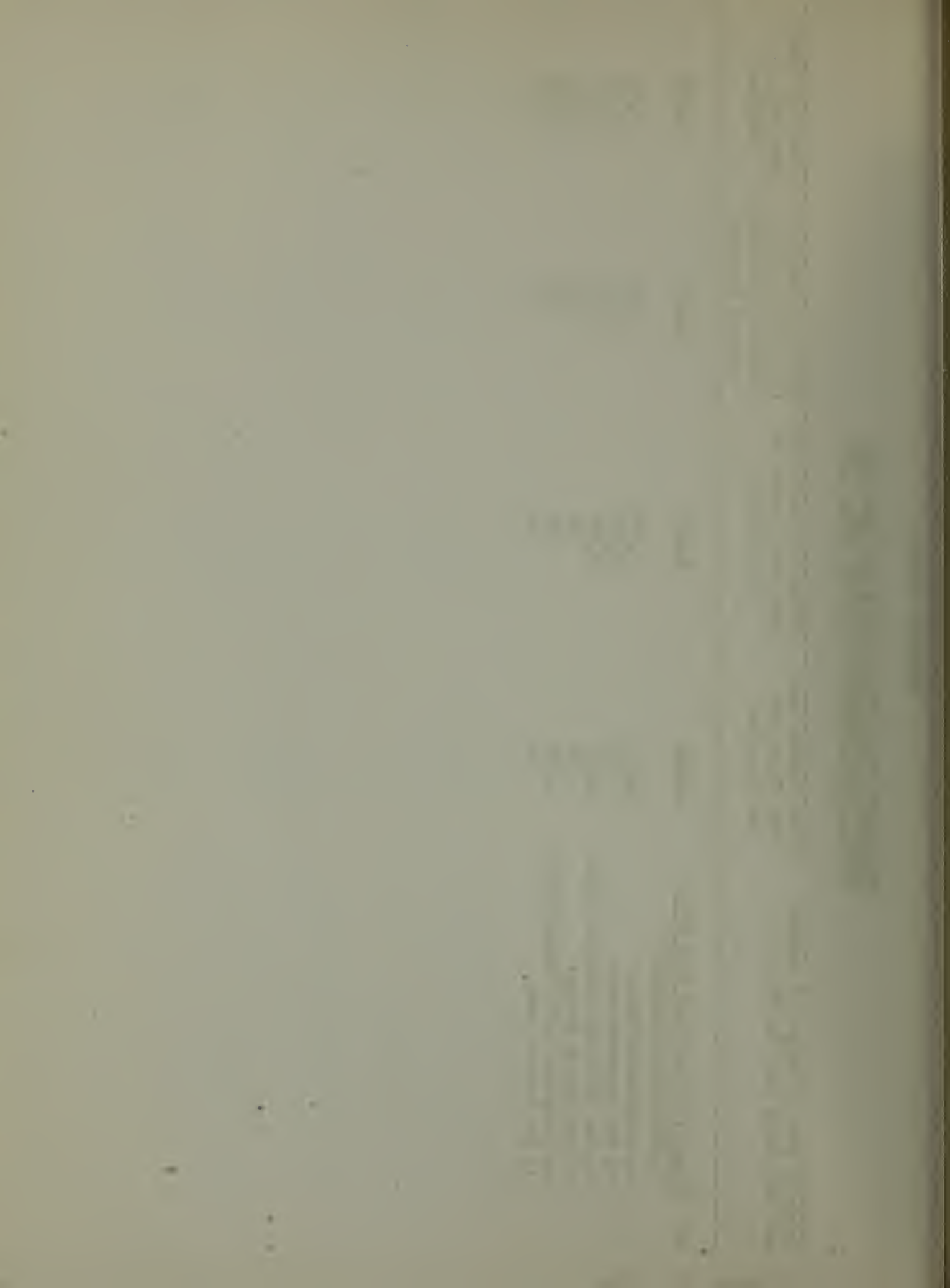




TABLE 34

BAY AREA COMMUTERS TO SAN FRANCISCO'S DOWNTOWN DISTRICTS  
PROPORTIONS USING TRAINS AND BUSES

Preliminary Data From: San Francisco Bay Area Rapid Transit Survey  
 (Typical Week Day, Spring, 1954)  
 Parsons, Brinckerhoff, Hall, and Macdonald, Consultants

Suburban Area of Origin of Commute Trip to San Francisco's Downtown Districts	Total Commute and Work Trips into Downtown & Surrounding Districts(San Francisco)	Trips Via Automobile	Trips Via Train & Bus	Per Cent Via Train & Bus
Total Suburban Commute Trips into All Parts of San Francisco	(99,458)	(62,822)	(36,636)	(36.8%)
Total Suburban Commute Trips into Sec- tor 01 -- N. E. San Francisco, N. of 16th St., & E. of Van Ness	<u>70,672</u>	<u>37,878</u>	<u>32,794</u>	<u>46.4%</u>
I. From Alameda and Contra Costa Counties to Sector 01	<u>30,338</u>	<u>17,221</u>	<u>13,117</u>	<u>43.2%</u>
1. From 10 East Bay Cities (Richmond -- San Leandro)	<u>25,904</u>	<u>14,218</u>	<u>11,686</u>	<u>45.1%</u>
a. Downtown Oakland, Emeryville	5,379	2,934	2,445	45.5%
b. Richmond, El Cerrito	2,498	1,557	941	37.7%
c. Berkeley, Albany	6,737	3,483	3,254	48.3%
d. East Oakland, San Leandro, Piedmont	9,413	5,334	4,079	43.3%
e. City of Alameda	1,877	910	967	51.5%
2. From Outer Portions of Alameda and Contra Costa Counties	<u>4,434</u>	<u>3,003</u>	<u>1,431</u>	<u>32.3%</u>
a. Hayward-San Lorenzo	1,837	1,319	518	28.2%
b. Washington Township & Livermore Valley	111	89	22	19.8%
c. Orinda-Lafayette-Walnut Creek	2,018	1,197	821	40.7%
d. Pinole-Martinez & Eastern Con- tra Costa County	468	398	70	15.0%



TABLE 34 (Contd.)

BAY AREA COMMUTERS TO SAN FRANCISCO'S DOWNTOWN DISTRICTS  
PROPORTIONS USING TRAINS AND BUSES  
 (Typical Week Day, Spring, 1954)

Suburban Area of Origin of Commute Trip to San Francisco's Downtown Districts	Total Commute and Work Trips into Downtown & Surrounding Districts (San Francisco)	Trips Via Automobile	Trips Via Train & Bus	Per Cent Via Train & Bus
II. From Marin, Sonoma, Napa and Solano Counties	10,027	5,459	4,568	45.6%
a. Southern Marin County (Fairfax- San Rafael & South.)	8,579	4,570	4,009	46.7%
b. Northern Marin County and Sonoma County	969	550	419	43.2%
c. Napa and Solano Counties	479	339	140	29.2%
III. From Peninsula Points (San Mateo & Santa Clara Counties)	30,307	15,198	15,109	50.1%
a. Brisbane, South S. F., San Bruno & Millbrae	7,276	5,583	1,693	23.3%
b. Burlingame, San Mateo & Belmont	10,358	5,281	5,077	49.0%
c. San Carlos, Redwood City, Atherton, Menlo Park, Palo Alto, Mountain View, Los Altos.	10,920	3,726	7,194	65.9%
d. San Jose & fringes	580	211	369	63.6%
e. Sunnyvale, Santa Clara, Campbell	939	251	688	73.3%
f. Los Gatos & West	234	146	88	37.6%

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The Heavy Peak-Hour Load of Suburban Train and Bus Lines.

In peak periods, such as from 7:30 to 8:30 in the morning, and from 4:30 to 5:30 in the evening, we find greatest concentrations of private automobiles on our main gateways to and from San Francisco, such as the San Francisco-Oakland Bay Bridge, the Golden Gate Bridge, and the Bayshore Freeway. In fact, these facilities operate so near their vehicular lane capacity, that a stalled vehicle or a minor accident will completely stall the flow of peak hour traffic, causing typical delays of from a few minutes to half an hour. Even with no obstructions, traffic often moves sluggishly because of the near-overload volume of auto traffic.

Curiously enough, during this same period, parallel suburban transit facilities often carry more persons during the heaviest peak hour than the three lanes of bridge or freeway, (and these persons are carried on a relatively small number of vehicles per hour). From 4:30 to 5:30 PM, for instance, buses and trains on the lower deck of the San Francisco-Oakland Bay Bridge in 1951 carried 65 per cent of all persons crossing the bridge from San Francisco to the East Bay during that peak hour. On the Golden Gate Bridge, suburban buses carried 49 per cent of all persons crossing the bridge from San Francisco to Marin County and North Bay points from 4:30 to 5:30 PM. Comparing automobiles on Bayshore Freeway with suburban buses on the freeway and suburban trains on the nearby parallel Southern Pacific tracks, we find that 70 per cent of the persons going through this outbound gateway travelled by train or bus. <sup>21</sup>

The general pattern of traffic flow for private automobiles, however, is much more even throughout the normal business day than is the flow of travel on suburban railway and bus systems, which carry high percentages of their total day's patronage during the peak hours. This is illustrated by percentages shown below:

PER CENT OF PASSENGERS INTO SAN FRANCISCO USING TRAINS AND BUSES<sup>22</sup>

(Average Week Day, 1951)

GATEWAY INTO SAN FRANCISCO	Peak Hour 7:30-8:30 AM	Mid-Day Hour	Entire Day
San Francisco-Oakland Bay Bridge	60%	23%	33%
Golden Gate Bridge	57%	13%	24%
Bayshore-Southern Pacific RR	73%	14%	34%

During the peak periods 6:30 through 9:30 AM and 3:30 through 6:30 PM, we find that some suburban transit facilities carry three-fourths of their entire day's patronage. Peninsula trains and buses carried 74.3 per cent of their total daily San Francisco bound passengers between 6:30 and 9:30 AM, and 74.6 per cent of their total daily outbound passengers left between 3:30 and 6:30 PM. Passengers in automobiles on Bayshore Highway, on the other hand, during these same peak periods amounted to 26.2 per cent of the inbound total over 24 hours, and

<sup>21</sup>"Means of Transportation Used by San Francisco Commuters." Memorandum by James K. Gibson, Supervising Transportation Engineer, Calif. State Public Utilities Com. Feb. 20, 1952. San Francisco.

<sup>22</sup> See note 21. See also above, Chart 3.





27.8 per cent of the outbound total. Thus three-fourths of the people entering San Francisco by private auto on Bayshore Freeway came and left at times other than during peak periods when journeys to and from work usually take place. (See chart 3).

Similar ratios were noted on the Golden Gate Bridge, where 74.4 per cent of the total daily Greyhound passengers came into San Francisco between 6:30 and 9:30 AM, and 73.3 per cent of the daily total left between 3:30 and 6:30 PM. Only 26.8 per cent of total daily automobile occupants arrived during the peak period, and 33.8 per cent left. (See Tables 35 and 36).

On the San Francisco-Oakland Bay Bridge, transit "highs" in peak periods were slightly less, with 64.4 per cent of the daily total transit passengers entering, and 66.1 per cent leaving during peak three-hour periods. Auto passengers in peak hours constituted 25.8 per cent of those entering during the entire day and 29.0 per cent of those leaving.

During these three-hour periods when most journeys-to-work and journeys-home-from-work take place, a majority of suburban trips were made by train and bus. Only on the Golden Gate Bridge were transit trips less. Peak period trips by transit made up 52.5 per cent of total peak period trips on the San Francisco-Oakland Bay Bridge, 59.9 per cent of the total peak period trips for the Bayshore-Southern Pacific gateway, but only 41.1 per cent of the peak period total for the Golden Gate Bridge for those leaving San Francisco, but 47.0 per cent of those entering.

For the entire day, however, transit passengers constituted about 32 to 33 per cent of the total persons crossing the San Francisco-Oakland Bay Bridge, and 34 to 35 per cent of those entering via the Bayshore Freeway-Southern Pacific gateway, and 24 per cent of those crossing the Golden Gate Bridge.

The rapid transit survey consultants found similar patterns holding true in their 1954 studies. Whereas the highest highway peak-hour count constituted only 15 per cent of the 24-hour total of auto passengers, transit peak hour passengers constituted the following proportions of 24-hour transit passenger counts: Peninsula: 54 per cent; Golden Gate Bridge: 46 per cent; San Francisco-Oakland Bay Bridge: 43 per cent; Broadway Tunnel-Orinda: 43 per cent.

This high concentration of peak hour travel onto public transit facilities on suburban routes is considerably more marked than is the comparable concentration on urban street car and bus lines within San Francisco. During the peak period, 3:30 to 6:30 PM, only 47.5 per cent of the total transit load for the day, outbound from the Metropolitan Traffic District, was carried on a typical week-day in 1947. Tallies of individual transit lines made in 1954 showed peak hour loads (3:30 to 6:30 PM) varying from 38.3 per cent of the all-day outbound passenger load, for lines serving close-in high-density population areas (North Beach, Nob Hill, etc.,) to from 50 to 53.8 per cent on the Twin Peaks Tunnel. Lines serving communities of individual homes in the West-of-Twin Peaks and Sunset areas.<sup>23</sup>

<sup>23</sup>See: Cordon Count Data Metropolitan Traffic District, San Francisco. Mayor's Administrative Transportation Council, San Francisco, 1947 -- Data also taken from 1954 passenger counts - entering and leaving Metro. Traffic District. Municipal Railway.

THE UNIVERSITY OF CHICAGO  
DEPARTMENT OF THE HISTORY OF ARTS  
AND ARCHITECTURE

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This tendency for suburban carriers to serve more and more only the journey-to-work and peak period passenger movements is essentially what is creating almost insurmountable problems of financing and operating transit systems for a profit. Numerous transit surveys, and testimony of transit operators in national transit trade journals give constant reminders that the loss of the mid-day occasional passenger and late evening transit patronage are the factors making many operations unprofitable. Some cars and buses may be used only for one round trip per day. Operators' schedules are difficult to work out, in view of recently-won union conditions for overtime over eight hours of employment during ten hours of elapsed time.

### Traffic Effect of Transit Strikes

The high carrying capacity of trains and buses during peak periods has been dramatically shown during periods when carriers' employees were on strike. In May 1946, and again in February 1951, Southern Pacific suburban service was interrupted by strikes of several days' duration, and highway gateways into San Francisco were overloaded. Resulting traffic congestion caused delays in morning and evening peak periods of up to one hour or more over usual highway travel time.

Similar, (but less serious) congestion resulted on Marin County routes and on the Golden Gate Bridge during the general strike on the Pacific Greyhound Lines in March, April, and May of 1952. Although car-pools and hitch-hiking stations help to remedy the problem for commuters, merchants in cities of Marin County hired charter buses to bring customers to their business districts who ordinarily reached there by public transit. By the end of the strike, the city of Mill Valley was proposing the establishment of a municipal bus line to San Francisco.

In the long Key System strike of from July through September of 1953, congestion on the Bay Bridge increased, but in a remedial measure the lower truck-bus deck of the Bay Bridge was opened to auto traffic. Many commuters used Greyhound buses from Richmond and downtown Oakland, and a large number of persons rode the Southern Pacific main-line trains and their ferry connections from East Bay train stations.

The Key System strike generated action on the part of East Bay city officials and business leaders to establish a public transit district to enable them to take over the Key System for public ownership and operation. A bill authorizing this is now being considered in the State Legislature.







TRANSIT PEAK HOUR CONCENTRATIONS  
PASSENGERS ENTERING SAN FRANCISCO DURING 24 HOUR PERIOD, 1952  
VIA GOLDEN GATE BRIDGE, BAY BRIDGE, BAYSHORE HIGHWAY, AND SOUTHERN PACIFIC R. R.

GATEWAY AND MODE OF TRAVEL	Total Entering San Francisco, 24 hours, 1952	Per Cent Auto and Transit	Total Entering During Peak Hours 6:30-9:30 AM	Per Cent, Auto and Transit	Per Cent Peak Period of Total
TOTAL ENTERING SAN FRANCISCO TYPICAL WEEK DAY, 1952 VIA THREE GATEWAYS (24 Hrs)	<u>169,556</u>	<u>100.0%</u>	<u>64,570</u>	<u>100.0%</u>	<u>38.1%</u>
Passengers in Automobiles	115,550	68.2%	29,804	46.2%	25.8%
Passengers in Trains and Buses	54,006	31.8%	34,766	53.8%	64.4%
TOTAL ENTERING VIA BAY BRIDGE	<u>96,995</u>	<u>100.0%</u>	<u>34,781</u>	<u>100.0%</u>	<u>35.9%</u>
Passengers in Automobiles	65,203	67.2%	16,526	47.5%	25.3%
Passengers in Trains and Buses	31,792	32.8%	18,255	52.5%	57.4%
TOTAL ENTERING VIA GOLDEN GATE BRIDGE	<u>24,309</u>	<u>100.0%</u>	<u>9,299</u>	<u>100.0%</u>	<u>38.2%</u>
Passengers in Automobiles	18,440	75.9%	4,934	53.0%	26.8%
Passengers in Buses	5,869	24.1%	4,368	47.0%	74.4%
TOTAL ENTERING VIA BAYSHORE HIGHWAY AND SOUTHERN PACIFIC R. R.	<u>48,252</u>	<u>100.0%</u>	<u>20,490</u>	<u>100.0%</u>	<u>42.5%</u>
Passengers in Automobiles <sup>**</sup>	31,907	66.1%	8,347	40.7%	26.2%
Passengers in Trains and Buses <sup>**</sup>	16,345	33.9%	12,143	59.3%	74.3%

NOTES: \* Bayshore Highway only; does not include entrances into San Francisco via El Camino Real, Junipero Serra Blvd, or Skyline Blvd.  
 \*\* Does not include Pacific Greyhound buses on El Camino Real, nor Municipal Railway buses serving Daly City and Colma.

SOURCE: "Means of Transportation Used by San Francisco Commuters." Memorandum by James K. Gibson, Supervising Transportation Engineer, California State Public Utilities Commission, February 20, 1952. San Francisco.



TRANSIT PEAK HOUR CONCENTRATIONS  
PASSENGERS LEAVING SAN FRANCISCO DURING 24 HOUR PERIOD, 1952  
VIA GOLDEN GATE BRIDGE, BAY BRIDGE, BAYSHORE HIGHWAY, AND SOUTHERN PACIFIC R. R.

GATEWAY AND MODE OF TRAVEL	Total Leaving San Francisco, 24 Hours, 1952	Per Cent, Auto and Transit	Total Leaving During Peak Hrs. 3:30-6:30 PM	Per Cent, Auto and Transit	Per Cent Peak Period of Total
TOTAL LEAVING SAN FRANCISCO, TYPICAL WEEK DAY, 1952 VIA THREE GATEWAYS (24 hrs.)	<u>170,162</u>	<u>100.0%</u>	<u>69,879</u>	<u>100.0%</u>	<u>41.1%</u>
Passengers in Automobiles	114,642	67.4%	33,201	47.5%	29.0%
Passengers in Trains and Buses	55,520	32.6%	36,688	52.5%	66.1%
TOTAL LEAVING VIA BAY BRIDGE	<u>96,087</u>	<u>100.0%</u>	<u>37,218</u>	<u>100.0%</u>	<u>38.7%</u>
Passengers in Automobiles	64,193	67.8%	18,047	48.6%	28.1%
Passengers in Trains and Buses	31,894	33.2%	19,121	51.4%	60.0%
TOTAL LEAVING VIA GOLDEN GATE BRIDGE	<u>24,703</u>	<u>100.0%</u>	<u>10,673</u>	<u>100.0%</u>	<u>43.2%</u>
Passengers in Automobiles	18,718	75.8%	6,284	58.9%	33.8%
Passengers in Buses	5,985	24.2%	4,389	41.1%	73.3%
TOTAL LEAVING VIA BAYSHORE HIGHWAY AND SOUTHERN PACIFIC R. R.	<u>49,372</u>	<u>100.0%</u>	<u>21,988</u>	<u>100.0%</u>	<u>44.5%</u>
Passengers in Automobiles*	31,731	64.3%	8,820	40.1%	27.8%
Passengers in Trains and Buses**	17,641	35.7%	13,168	59.9%	74.6%

NOTES: \* Bayshore Highway only; does not include exits from San Francisco via El Camino Real, Junipero Serra Blvd. or  
\*\* Skyline Blvd.

Does not include Pacific Greyhound buses on El Camino Real, nor Municipal Railway buses serving Daly City and  
Colma.

SOURCE: "Means of Transportation Used by San Francisco Commuters." Memorandum by James K. Gibson, Supervising Transportation Engineer, California State Public Utilities Commission, February 20, 1952. San Francisco.





TABLE 37

TRANSIT PEAK HOUR CONCENTRATIONS  
 PERSONS LEAVING SAN FRANCISCO'S METROPOLITAN TRAFFIC DISTRICT  
 (Downtown and Surrounding Areas)  
 IN PEAK HOURS BY AUTO AND TRANSIT

CORDON GATEWAY INTO SAN FRANCISCO'S METROPOLITAN TRAFFIC DISTRICT	LEAVING METROPOLITAN TRAFFIC DISTRICT		
	During 24 Hours*	During Peak Period 3:30-6:30 PM	Per Cent Peak Period of Total
Passengers in Automobiles, Total Leaving from Metropolitan Traffic District, Typical Week Day, 1947	310,216*	102,660	33.1%
Passengers in Local Transit Vehicles, Leaving from Metropolitan Traffic District, Typical Week Day, 1947	242,096*	115,035	47.5%
Passengers in Local Transit Vehicles, on Particular Lines in 1954, Typical Week Day:	**		
Stockton Trolley Bus Line (#30)	12,538	4,803	38.3%
Stockton at Sacramento Street			
Powell-Mason Cable Car Line	3,527**	1,232	34.9%
Powell at Sacramento Street	**		
Clement Trolley Bus (#2)	4,206	1,911	45.4%
Sutter at Van Ness Avenue	**		
Geary Car Lines ("B" and "C")	8,398	3,850	45.9%
Geary and Franklin Streets	**		
McAllister Trolley Bus (#5)	7,576	3,948	52.1%
McAllister at Gough Street	**		
Ingleside Twin Peaks Tunnel Car Line ("K")	5,411	2,744	50.7%
Market at Van Ness Avenue	**		
Taraval Twin Peaks Tunnel Car Line ("L")	6,190	3,328	53.8%
Market at Van Ness Avenue			

\*Cordon Count Data, 1947. (Opus Cit.) Data was for 12 hours. Has been expanded by 20% on basis of observed ratios reported in many traffic surveys.

\*\*Passenger Check, Municipal Railway. (See note above)





## IX. CONCLUSIONS AND SUMMARY

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## Regional Significance of Downtown San Francisco

With over 183,000 persons coming into San Francisco every week day from communities of the nine-county metropolitan area surrounding San Francisco Bay, 100,000 of them coming in every day to work, San Francisco's position as the core center of the area appears well-established. More than half of these in-bound passengers, and almost three-fourths of the commuters, are bound for San Francisco's Downtown District and the immediately surrounding areas that make up the Metropolitan Traffic District.

In the Financial District, we find that three out of ten persons working there have their homes in the suburbs. Commuting to Downtown San Francisco has been going on ever since suburban transportation facilities were established in the 1870's. On the Peninsula and in Marin County the growth of commuter and shopper traffic into San Francisco has kept pace with population growth of the suburban areas. Only in the East Bay has the increase in travel into San Francisco fallen behind the East Bay's population growth, where the deficit is probably explained by greater employment self-sufficiency of the cities in Alameda and Contra Costa Counties, and by the growth of shopping and recreational facilities that draw away some of the non-work travel that in the 1910's and 1920's came to "The City" as a matter of course.

In the Union Square area, we find that one out of five shoppers came in from outside the city. Although the proportion of suburban shoppers and others on non-work trips is not as great as the suburban commuter flow, this must be interpreted in the light of the fact that shopping trips "to the City" may be once-a-week or once-a-month affairs and may involve transactions of far greater sums (for furniture, rugs, objects of art, fur coats, major clothing items) than shopping trips to suburban shopping centers, which tend to deal more in volume sales of standard lower cost items, according to store executives operating downtown department stores with suburban branches. Also, every commuter may be also a shopper during his lunch hour or after work, or on nights when stores stay open to 9 PM, or on evenings when organization dinners must be attended at a North Beach restaurant.

San Francisco's regional significance is not limited to the Financial District, or even to the Metropolitan Traffic District, but substantial volumes of Bay Region dwellers come to work every day in all parts of the city -- mostly by private automobile to the outer areas. Many important institutions are located in San Francisco's residential community areas such as colleges and universities, hospitals, museums, research foundations and administrative headquarters. Many of these have hundreds of employees.

## Existing Trends Indicate Certain Types of Daily Trips are Best Served by Public Transit

Clearly shown in the origin-destination and trip-purpose data from the 1947 Bay Area Metropolitan Traffic Survey and from the 1954 San Francisco Bay Area Rapid Transit Survey are the large flows of passenger travel handled every day by public transit facilities. This is despite a general decline

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of transit patronage and an increase in the use of private automobiles for daily journeys of all types. The flows of passenger traffic now in existence on public transit lines, and data from the two origin-destination surveys as to purpose and place of destination indicate a strong transit potential for the following types of trips:

- (1) Journeys-to-Work: Particularly in metropolitan core centers, like San Francisco's Central Business District, we now find a majority or a substantial portion of people coming to work on public transit, even though this has been modified by increased use of private automobiles and decreased use of transit. Data in the 1947 survey showed that almost two-thirds of all journeys from home to work, regardless of employment location, were by public transit. The only exception was in San Franciscans working in outlying industrial areas, where transit connections were indirect, infrequent, and time-consuming (and adequate off-street parking for autos was provided free), and suburban dwellers working in San Francisco's outlying areas where lack of through transit service meant far greater travel time than could be achieved by use of private automobiles. Even with these circumstances unfavorable to transit, about one-fourth of all workers in outlying areas came to work on public transit.
- (2) Trips to Central Areas: Trips of all sorts to San Francisco's Central Business District showed a strong transit riding-habit trend. In 1947 a majority of all trips from home to shop, from home to get medical attention, and other similar purposes, was made by public transit. A study would probably show that almost half (if not more) of the San Franciscans shopping in the Union Square area had "come Downtown" by public transit. This does not hold true of suburban shoppers, who in large majority come in by private automobile. Infrequent and slow mid-day schedules of suburban rail and bus lines are thought to be a major factor in this smaller ratio.
- (3) Suburban Commuting to Central Areas: Where good fast service on suburban rail and bus lines now exists, majorities of commuters use them in commute trips to work places located near their termini. Proportions using transit appear to diminish as service provided particular localities decreases in frequency, speed, and accessibility, and as work places become further removed from transit termini.

Certain Types of Trips will Probably Always be Undertaken by Private Auto.

Trip-purpose data clearly brought out certain types of daily trips which at present are overwhelmingly undertaken by private automobile, and probably represent portions of the passenger travel market that would be difficult for public transit systems (no matter how improved) to recapture.







These would include:

(1) Social and Recreational Trips: Economies of group travel, flexibility of routing, ease of reaching out-of-the-way places, prestige values, and the very human love of automobile "joy-riding" will make social and recreational travel predominantly a private-auto class of transportation, no matter how good a rapid transit system may be established in the future. The only exception to this may be a growth of charter bus trips for organization groups, as new models of buses become more attractive, and as enjoyment and economies of group travel and freedom from driving responsibilities become more generally realized.

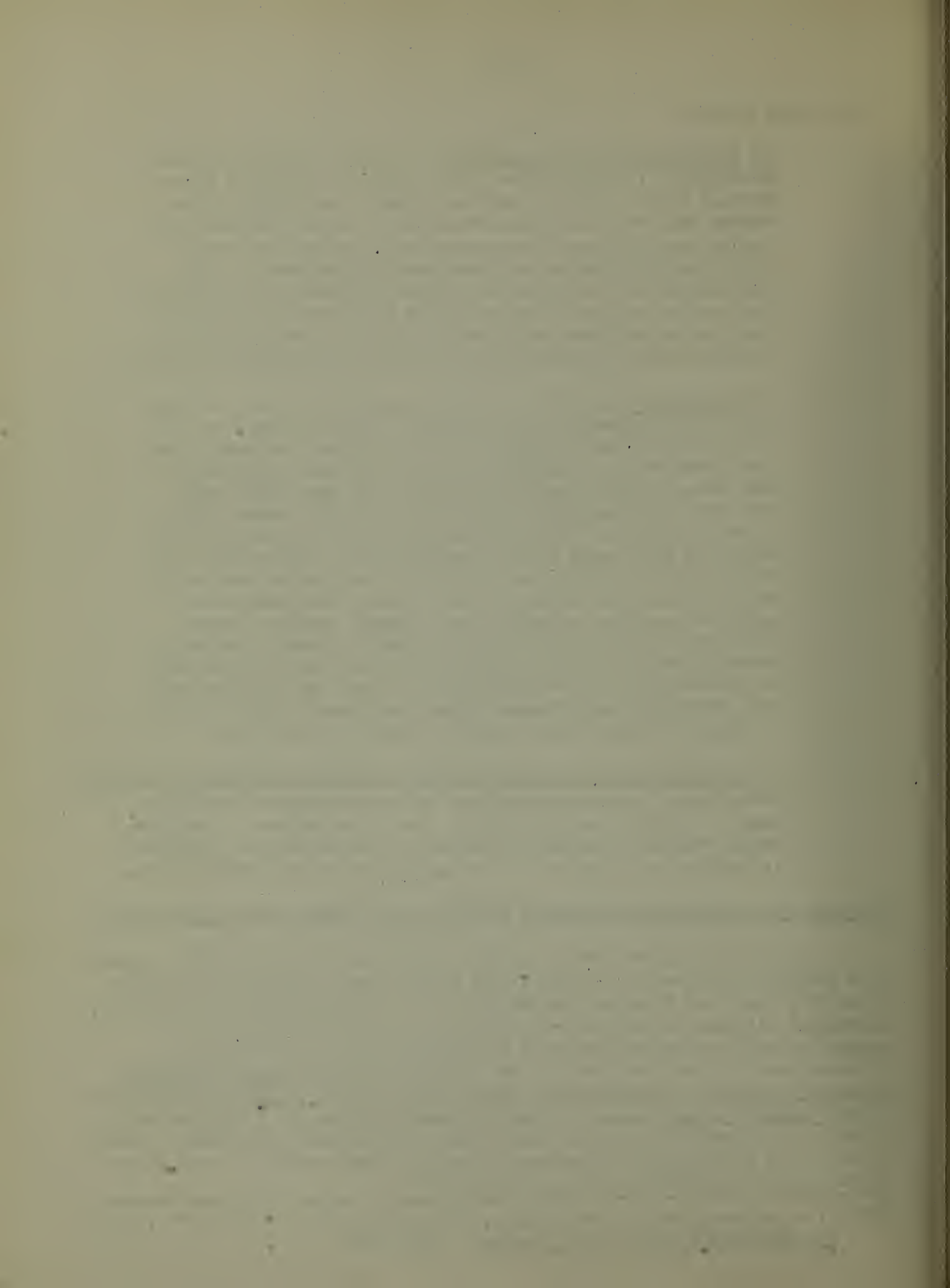
(2) On-the-Job Trips: The day will probably never come when the type of trip undertaken in a "company automobile" will be made to any great extent on public transit vehicles. Salesmen, doctors, architects, contractors, construction crews, utility repair crews, jobbers, public officials, and many others must have fast, personalized, individually-scheduled transportation at their disposal. Delays in waiting for public transportation would cost them money in work day hours lost. Only within the metropolitan core center area itself, as convenient mass rapid transit systems are developed, and as these are quicker and easier to use than automobiles on congested surface streets, will there be any tendency for this type of travel to be undertaken by public transit. (Some recovery of business trips may be effected with the establishment of a fast and efficient Bay Area interurban rapid transit system for "single trip" journeys to suburban plants located near the rapid transit line).

(3) Journeys-to-Work off Main Streams of Travel, on Night Shifts, etc.: Where home or place of employment is inconvenient to transit stations or termini, and where great time or convenience advantages obtain from use of private automobiles, the extra cost to the individual in daily use of his automobile will be cheerfully borne.

#### The Need for Adequate Public Transit Facilities in a Metropolitan Core Center.

One of the places where a strong realization of the need for adequate mass transit facilities in a metropolitan center seems to be felt is the District IV Office (San Francisco Bay Region) of the California State Division of Highways. Although strongly dedicated to their job of planning the most modern and well-engineered system of freeways and express motor vehicle thoroughfares for San Francisco and the Bay Region, these highway engineers feel that automobile transportation alone can not serve congested central cores of metropolitan areas, because of the low carrying capacity of highways and freeways as to number of persons transported, when compared with buses, trains, subways, and street cars, and because of the high requirements for off-street storage space in downtown areas. To quote: <sup>24</sup>

<sup>24</sup>California State Division of Highways, District IV Office, 150 Oak St., S.F.  
Bay Area Metropolitan Traffic Survey. June 1949



"In the smaller communities, public transit is at a decided disadvantage in attempting to compete with the private automobile . . . . . However, as communities increase in size, a greater share of the total travel goes to public transit, and in metropolitan areas where there are compact business districts and large office buildings, public transit is indispensable. A city such as San Francisco could not function if the automobile were the only means of transportation. . . . .

"These figures" [figures showing that the average 6-lane freeway has a capacity of about 9,000 persons per hour in automobiles in one direction, compared with a capacity of from 10,000 to 50,000 persons per hour in one direction for a two track transit or rapid transit line]". . . . . clearly indicate that where the transportation of a large number of people is required in a short period of time, the automobile is not the answer. We must go to a system of mass transit . . . . .

"Traffic counts taken around the periphery of the Downtown area in 1937 and 1947 show only a slight increase in the number of automobiles entering and leaving the area in 1947 over 1937. The reason for this is obvious - street congestion. It should also be fairly obvious that the future growth and development of the downtown area will depend largely upon the adequacy of public transportation serving the area. If more people are expected to circulate in the Financial and Shopping Districts, a greater percentage of the total travel will have to be handled by public transit. Even though a system of freeways is built along the fringes of the Downtown area, it will still be necessary for automobile users to travel over city streets to reach their ultimate destinations, and this final lap of the trip will have to be made, whether afoot, or by bus or street car. The limited capacity of the existing Downtown streets will not permit any appreciable increases in the use of automobiles."

Improvements Planned for Reaching Downtown San Francisco by Auto & Transit.  
Freeways and Expressways for Motor Vehicles

A program that has already cost close to \$50,000,000, and within the next five years will involve expenditures of more than \$100,000,000 additional funds (state and city), will provide San Francisco with a first class modern and efficient system of express highways designed for high-speed movement of automobiles, trucks, and buses. Most of the routes will be completely separated from normal city street traffic, pedestrians, children, pets, and bicycles. Freeways, with adjoining properties fenced off and having no right of access, and with cross-traffic carried over or under via separation structures, will provide motor vehicles with "rapid transit" routes that should insure quick vehicular access from any part of the city to any other and with the city's gateways to other Bay Area points.

Planned in outline form in Report.... on a Transportation Plan for San Francisco developed by De Leuw, Cather and Company, consulting engineers, and Ladislav Segoe and Associates, consulting city planners, in cooperation with the San Francisco Departments of City Planning, Public Works, Police, and the Public Utilities Commission, the thoroughfare plan to be developed was adopted as a part of the Master Plan of the City and County of San Francisco on July 17, 1951. This comprises the system that is under construction by the State, parts of it also being built by the city.





Bayshore Freeway, linking the San Francisco-Oakland Bay Bridge with San Francisco's Peninsula gateway, is nearing completion, and most of its route is already in service. Its total cost for a little over six miles of route is close to \$40,000,000 of which almost half was for right-of-way acquisition cost. The Embarcadero Freeway and the Central Freeway are under way to provide an elevated highway loop separated from the city street system and circling the Metropolitan Traffic District, providing many points of access to its streets.

The efficiency of these expensive facilities, constructed largely by the California State Division of Highways out of motor vehicle fuel tax funds, depends upon their not being overloaded by commuter-type daily peak hour uses of automobiles (as noted above in the quote from the state highway engineers), and upon provision of adequate off-street terminal storage facilities for the additional motor vehicles brought into San Francisco's Metropolitan Traffic District area.

#### New Off-Street Parking Terminals for Downtown San Francisco

In the De Leuw-Segoe report of 1948, cited above, 5,800 new off-street parking stalls were recommended for San Francisco's Metropolitan Traffic District to meet urgent current parking space deficiencies. This proposal was based upon parking demands measured through B.A.M.T.S. auto trip-destination data. Since the voting in 1947 of a \$5,000,000 bond issue by San Francisco's electorate, the Parking Authority of the City and County of San Francisco has provided 1,178 off-street parking stalls, and authorized construction will shortly provide 1,700 more. Current plans call for the provision of 5,070 additional off-street parking spaces in multi-story ramp garages and open parking plazas in locations on the edge of the Central Business District. Including the 3,000 stalls in Union Square Garage (constructed during World War II,) San Francisco will have a total of 10,948 city-owned off-street parking spaces when the Parking Authority's program is completed. The Authority's program will cost \$24,597,150 for twelve garages and plazas.

Being discussed currently is a proposal for a fringe parking lot to be operated by the Parking Authority on land under the elevated Bayshore Freeway structures in the block between Harrison, Bryant, 6th and 7th Streets. This would provide space for 1200 automobiles and would be connected with Downtown by shuttle buses.

Many merchants hope that when off-street facilities are provided in sufficient number to take care of most Downtown shoppers' needs, restrictions can be placed on curb parking on streets, so that the streets can be used 100 per cent for the movement of vehicles, particularly public transit vehicles. More rapid Downtown transportation will result in more people being attracted to use transit to reach downtown stores, they feel.





## Urban Rapid Transit for San Francisco

Comprehensive systems of local urban rapid transit were recommended in 1948 in the De Leuw-Segoe transportation report, and again in a special report by the Director of Planning to the Mayor in April of 1950.<sup>25</sup> Major proposals include a multiple-unit rapid transit train system, in a subway under Market Street, and in grade separated rights-of-way combined with a freeway through the Mission District, and in the existing street car tunnels under Twin Peaks and Parnassus Heights. Current thinking on the "Market Street Subway" and related plans is being held in abeyance pending the publication of the Bay Area Rapid Transit Plan by the San Francisco Bay Area Rapid Transit Commission (expected to be released in August of 1955). San Francisco has appropriated \$68,000 to finance studies to correlate its rapid transit plans with those to be developed by the rapid transit commission.

A recent report of the San Francisco Department of City Planning discussed specialization of Downtown streets into three basic types:

(1) Motor vehicle streets -- to be utilized for maximum capacity carriage of vehicles, (mostly one way streets with parking restricted or prohibited);

(2) Pedestrian streets, with greatly widened sidewalks, narrowed street space, and traffic excluded except truck and taxi traffic serving frontage property owners;

(3) Transit streets, with private automobile traffic excluded, being dedicated to the swift movement of surface transit vehicles.<sup>26</sup>

Complete grade separation of Market Street from traffic on cross streets is also discussed, with an alternate proposal for an underground "transitway" for street cars, or trolley buses or buses.

Subways and other transit improvements have been thought of for a long time in San Francisco. In 1905, Daniel Burnham's plan for remaking San Francisco into "the Paris of the West" included proposals for subways.<sup>27</sup> Bion Arnold's report on transportation improvements in 1913 included proposals for the Twin Peaks Tunnel, the Sunset Tunnel, the Stockton Street Tunnel, and the Broadway Tunnel (all since constructed), for improvements to the Municipal Railway (carried out), and for a Market Street subway (still a project being thought about!).<sup>28</sup> In 1936, the strongest recommendation for a Market Street subway was made by the New York engineering firm of David Ridgway and Alfred Brahdy, but insufficient votes were obtained in a subsequent bond election to authorize construction.<sup>29</sup>

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<sup>25</sup> A Subway and Rapid Transit System. . . for San Francisco. Report of Paul Oppermann, Director of Planning, to Mayor Elmer E. Robinson (Including Report of Consultant, DeLeuw, Cather and Company) April, 1950.

<sup>26</sup> Modernizing Downtown San Francisco, San Francisco Department of City Planning, January 1955.

<sup>27</sup> A Plan for the Adornment and Beautification of San Francisco-Daniel Burnham, 1905.

<sup>28</sup> Report on Transportation Facilities of San Francisco. Bion Arnold, 1913.

<sup>29</sup> Rapid Transit for San Francisco. David Ridgway and Alfred Brahdy, Consulting Engineers, 1936.





Origin-destination and trip-purpose data analyzed in this report (as well as in the 1948 De Leuw-Cather Segoe transportation report) would tend to support a showing of need for efficient mass transit facilities within San Francisco, for access to Downtown, and for a majority of all journeys-to-work and journeys home-from-work.

#### Interurban Rapid Transit for the San Francisco Bay Region

In August of 1955 it is expected that the San Francisco Bay Area Rapid Transit Commission will publish the report and recommendations of its consultants, Parsons, Brinckerhoff, Hall, and Macdonald, for a system of high speed rapid transit facilities linking all parts of the nine-county area of the San Francisco Bay Area. At the same time, a report will be forthcoming from Stanford Research Institute as to financial feasibility of the proposed system, proposed methods of financing its construction, and proposed organization of a transit district or transit authority to operate it.

In preliminary statements, the consulting engineers have said that they believe their most important task is to provide a means of rapid transportation for the main streams of journeys-to-work and journeys-from-work-to-home, which their origin-destination survey showed involved the highest transit riding habits of any class of daily trip. If the existing trend of increasing use of private automobiles on trips to work is not reversed, peak hour traffic could well congest our multi-million dollar freeways so that much of their value as fast transportation arteries would be counteracted or lost.

Whatever shopper traffic and off-peak loads the proposed new rapid transit system can also attract to its service would also be beneficial in concurrent reductions of vehicular traffic congestion in Downtown San Francisco, Downtown Oakland, and downtown areas of other regional centers in the Bay Region.

High speed, safety, comfort, frequent schedules, and conveniently located central stations are features sure to be incorporated into the system recommended, with the standard to be achieved described as "speed, convenience, and comfort equal to or superior than those possible in private automobiles on freeways." A number of proposed systems, including conventional rail rapid transit cars, suspended Monorail cars, rail-guided multiple-unit buses, "saddle-bag" Allweg Monorail cars, and other systems are being analyzed as to costs, technical difficulties, and feasibility.

#### Balanced Transportation System Needed.

For the proper balanced development of San Francisco's Downtown, and the proper stimulation of the growth and accessibility of all parts of the San Francisco Bay Region, modern facilities for both automobile and transit passengers are necessary. Data discussed in this report show that substantial masses of people are now moved by public transit systems, despite inconveniences, crowded vehicles, slow speeds, and infrequent service sometimes encountered on some lines.





With a proper rapid transit system, both urban and interurban, it is predicted that much of San Francisco's downtown street congestion would be eased. Some of the 50,000 San Franciscans and other thousands of Bay Region community residents, who used to use public transit and now drive or ride in private automobiles, particularly in their journeys-to-work, could be induced to leave their autos at home, or at outlying transit station parking lots, and ride the projected fast, comfortable, and convenient rapid transit trains to Downtown San Francisco, and to the downtown areas of other regional centers of the Bay Area. Then the freeways and expressways, now under construction, (and in some localities, already overcrowded at peak periods) could function in the efficient manner expected of them for the benefit of those who really need to make use of private automobiles in their daily work, and for the benefit of those who want to use their autos for social, recreational, sightseeing, or personal reasons.

Without rapid transit, we could expect existing and planned freeways to lose much of their value because of over-capacity use by private autos and resultant congestion and reduction of travel speeds. Planned off-street parking facilities would also lose their attraction-power if consistently full and overcrowded.

An alternate solution would be the construction of more and more freeways and off-street parking terminals to meet traffic demands when existing facilities become overcrowded. In congested metropolitan core areas, however, this would prove very expensive in property acquisition costs, and in removal of valuable assessment values from the tax rolls. It would also create vast acreages of "dead space" interfering with factors of proximity that help to create the value of metropolitan downtown areas, where interrelated activities should be within easy walking distance of each other.

Thus, it may prove more expensive (in terms of values lost) not to have rapid transit than to spend the hundreds of millions of dollars necessary to finance building of its expensive grade-separated structures.

The first part of the paper is devoted to a general discussion of the problem of the origin of life. It is shown that the problem is not only a scientific one, but also a philosophical one. The author discusses the various theories of the origin of life, and shows that the most plausible one is the theory of spontaneous generation. This theory is based on the fact that life is a complex phenomenon, and it is not possible to explain it by the action of a few simple causes. The author also discusses the question of the origin of the first living organisms, and shows that the most plausible theory is the theory of abiogenesis. This theory is based on the fact that life is a complex phenomenon, and it is not possible to explain it by the action of a few simple causes.

The second part of the paper is devoted to a detailed discussion of the theory of spontaneous generation. The author shows that this theory is based on the fact that life is a complex phenomenon, and it is not possible to explain it by the action of a few simple causes. The author also discusses the question of the origin of the first living organisms, and shows that the most plausible theory is the theory of abiogenesis. This theory is based on the fact that life is a complex phenomenon, and it is not possible to explain it by the action of a few simple causes.

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## ACKNOWLEDGEMENTS

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(2) Various persons at the Sacramento Office of the Division of Highways who aided in getting special tabulations of B.A.M.T.S. data to this Department, particularly Mr. Kenneth MacLachlin.

(3) The staff of Parsons, Brinckerhoff, Hall and MacDonald, consulting engineers for the San Francisco Bay Area Rapid Transit Commission, particularly Mr. Dean Quinby and Mr. Charles Woods, for help on obtaining data from the 1954 passenger origin-destination survey of the Bay Area, as well as Captain Angus Cohan, USN (Ret), Executive Secretary of the San Francisco Bay Area Rapid Transit Commission, for helping to make it possible to get the data.

(4) Mr. Ross Shoaf, Traffic Engineer for the San Francisco Department of Public Works, for help in getting 1953 cordon count data on vehicular traffic entering San Francisco's downtown districts.

(5) Mr. Vernon Anderson, Superintendent of Traffic for the San Francisco Municipal Railway, for making available counts of Municipal Railway passengers entering and leaving San Francisco's downtown districts in 1954.

(6) Mr. Dan L. Coolidge of the Operating Department, Southern Pacific Company, for information on Peninsula Division suburban rail passengers.

(7) Mr. James K. Gibson and Mr. William A. Peters of the California State Public Utilities Commission staff for information on peak hour and 24-hour counts of passengers by transit and auto entering San Francisco and general information.

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